AIR CONDITIONING WINTER-SUMMER YEAR 'ROUND

ARCHITECTURAL
COMPETITION
FOR THE

"HOME ELECTRIC"

GENERAL ELECTRIC

Specifications

GENERAL ELECTRIC

AIR CIRCULATOR

TYPE HV-1

General

The General Electric Air Circulator, Type HV-1, is especially designed for quiet and efficient operation. It consists of a flexibly mounted motor and a directly connected aphonic pressure type propeller fan assembled in a sturdy and attractive cabinet set on rubber cushioned legs. The finish is a durable gray with nickel trim.

Two models are available: a standard model with black finish legs and a de luxe model with chromium-plated legs.

The Air Circulator is designed primarily for installation in the attics of homes to induce comfortable conditions during hot summer weather in the following two ways:

1. By inducing a forced circulation of air through the attic during the day the heat leakage into living quarters due to the hot sun effect on the roof is substantially eliminated.

2. By drawing the relatively cool outside air through the living quarters toward the end of the day and during the evening when the out-of-door temperature is cooler than the indoor temperature, the heat stored in the house is substantially eliminated.

Proper application of the Air Circulator will permit the maintenance of temperatures in living quarters substantially cooler than those commonly encountered in homes during summer weather.

The Air Circulator may be set in front of an attic window and suitably connected to the nearest source of power supply. Also it can be permanently installed with duct connection to the outside and with suitable electric wiring, time switch and other accessories.

Either direct current or alternating current motors are available as required. An automatic time switch for ten hours' operation, a manual wall switch and a metal duct with louvres for attachment to a window are available as extra equipment. The automatic time switch will operate the unit for any length of time up to ten hours, depending upon the setting made by the user. A fan guard is available as extra equipment.

Cabinet

Finish.....Light gray
Material.....Expanded metal on steel frame
Legs.....Adjustable in height
Width.....24⅜ inches
Height.....24⅜ inches
Depth.....15⅛ inches

Fan

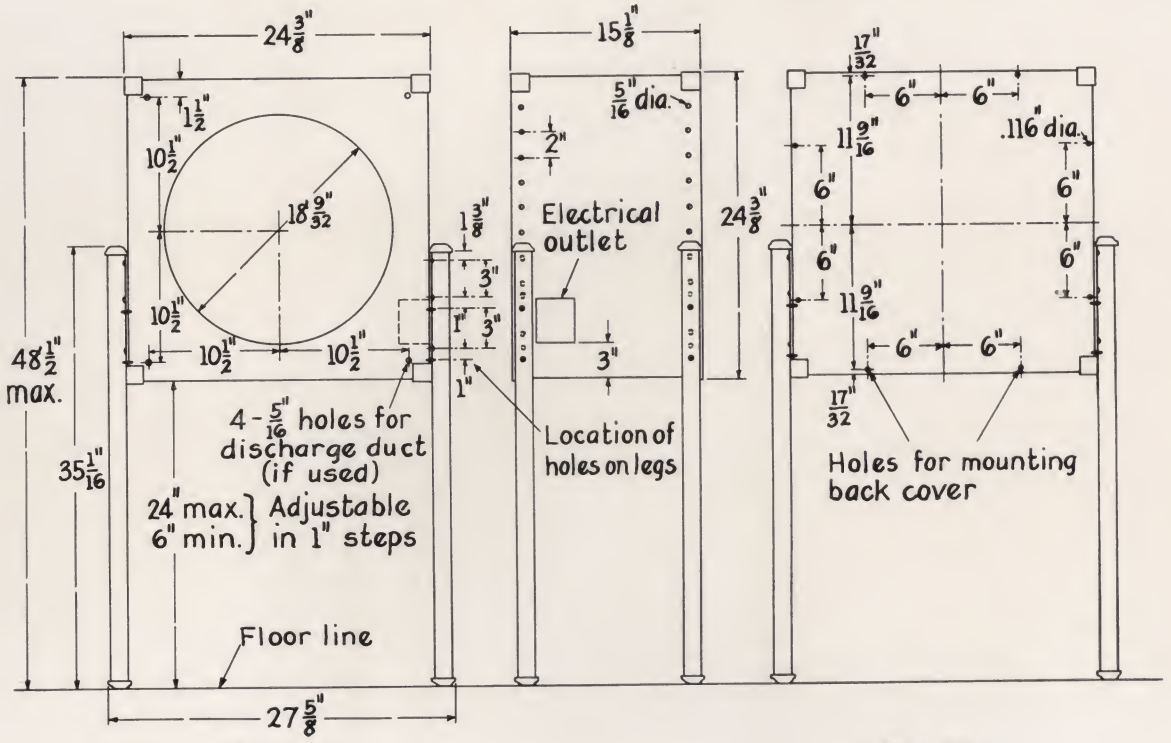
Type.....Aphonic pressure propeller
Diameter.....18 inches
Blades.....Three—Black finish

Performance Rating—60 Cycles or D-c.

Air Circulation
Back pressure, 0.11 inch of water (maximum allowable).....2050 cfm.
With duct transition.....2300 cfm.
Back pressure, 0 inch of water.....2600 cfm.
Power consumption.....200 watts

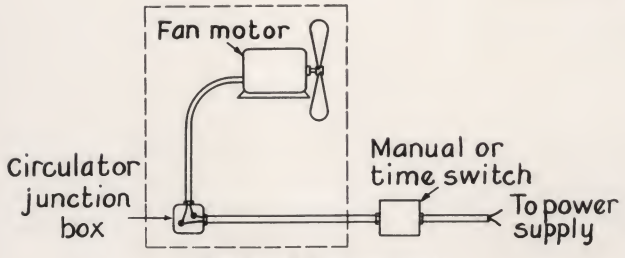
MODEL NUMBERS

HV-1 Air Circulator	Motor Type	POWER SUPPLY			WEIGHT LB.	
		Volts	Cycles	Phase	Net	Shipping
STANDARD						
21HV1A1	KC	110	50/60	1	85	120
21HV1A2	BC	115	d.c.	...	85	120
21HV1A3	KH	110	25	1	85	120
DE LUXE						
21HV1A4	KC	110	50/60	1	85	120
21HV1A5	BC	115	d-c.	...	85	120
21HV1A6	KH	110	25	1	85	120



Front View **Back View**

Connections and Dimensions



Electrical Connections

Time Switch

Fan Motor

Size	1/8 hp.
Speed	860 rpm.
Mounting	Rubber
Standard a-c. motor	110 volt, 50/60 cycle, Type KC 110 volt, 25 cycle, Type KH
Standard d-c. motor	115 volt, Type BC

Other power supplies available on special order.

Electrical Connections

Use standard A.W.G. BX No. 14 twin-conductor cable or equivalent. Removable plug and receptacle are provided for power correction.

Accessories (to be ordered as extras)

Window Duct and Shutter	Cat. No. 5161083G1

Time switch

Setting	Manual
Operating period	0–10 hr.
Type	Mechanical
Rating	10 amperes
Catalog number	65X162

Manual switch

Switch Plate	Cat. No. NP-60672
Switch	Cat. No. GE-2841
Fan Guard	Cat. No. 5184397

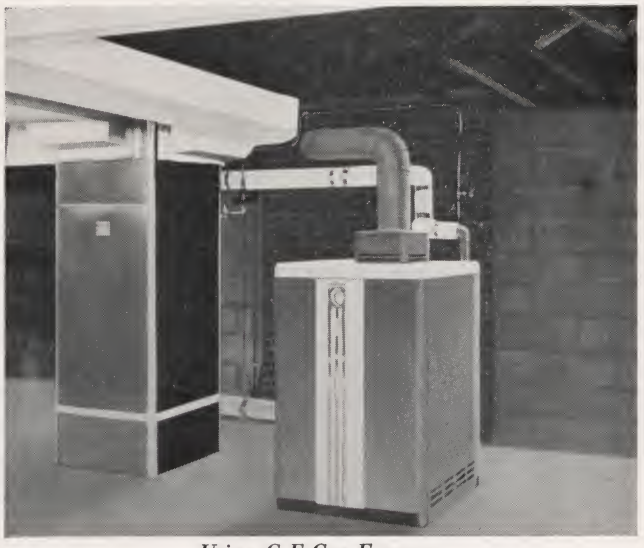
Specifications

GENERAL ELECTRIC

AIR CONDITIONING SYSTEM

(Using G-E Type AA-3 Air Conditioner)

Using G-E Oil Furnace



Using G-E Gas Furnace

General Electric Winter Air Conditioning System

GENERAL

The General Electric Air Conditioner, Type AA-3, is designed as a basic central plant air conditioning unit for use with a duct system for delivery of the conditioned air, where the total static pressure of the duct system does not exceed 0.12 in. water pressure.

The Type AA-3 Air Conditioner consists essentially of two sections, the upper one of which contains the steam heating coils, humidifier, and the manifolds to which the supply ducts are connected. This upper section may be set to face any one of four directions with respect to the lower section. The lower section contains the blower, blower motor, belt drive, dust filters, and a sonic filter for noise reduction. The frame holding the filters is equipped with a flange for the return duct connection. The filters can be readily withdrawn through openings covered with removable doors, at the ends of the filter frame.

The following accessories are furnished with the General Electric Type AA-3 Air Conditioner: Coordinated control box for mounting on wall or pillar, humidistat, magnet valve for controlling humidifying water flow, strainer for humidifier water line, heat exchanger thermostat (see later section on "Operation of Controls").

The height of the unit is adjustable by cutting off the supporting legs with a hack-saw. The side plates and internal parts are supported on a heavy angle iron framework designed to minimize vibration. The solid construction of the unit, plus its acoustic treatment, renders it unusually quiet in operation.

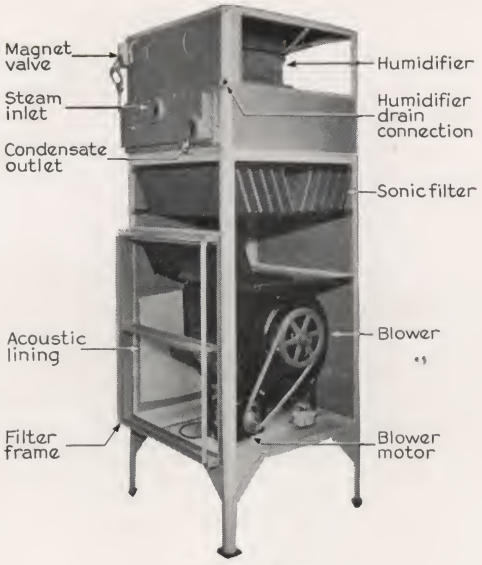
The Type AA-3 Air Conditioner is designed primarily for use with either the G-E Oil Furnace or G-E Gas Furnace to form the coördinated General Electric Winter Air Conditioning System. Furnished with either of these Furnaces is the G-E Thermal Control for automatic temperature regulation. The Air Conditioner may also be used for year 'round air conditioning service by installing a General Electric cooling attachment (direct expansion evaporators) in the return duct and connecting it to a General Electric Air Conditioning Condensing Unit of suitable rating.

The Type AA-3 Air Conditioner may also be used for winter or year 'round service where steam for the heating coils can be supplied from a central steam system. When so used a motor-operated valve is employed to control the admission of steam to the heating coils.

When used with either of the General Electric Oil Furnaces, the system will automatically supply hot water to a storage tank, winter and summer, from built-in coils in the Oil Furnaces.

Two Type AA-3 Air Conditioners may be used with one G-E Type LA-5 Oil Furnace or with G-E Gas Furnaces Types RK-65 or RK-76. Three Air Conditioners may be used with G-E Gas Furnaces Types RK-87 or RK-98. When two or more Air Conditioners are used with a single Furnace, they may be controlled either simultaneously or independently, depending on the requirements of the installation.

Exterior View



Interior View

General Electric Type AA-3 Air Conditioner

SPECIFICATIONS OF TYPE AA-3 AIR CONDITIONER

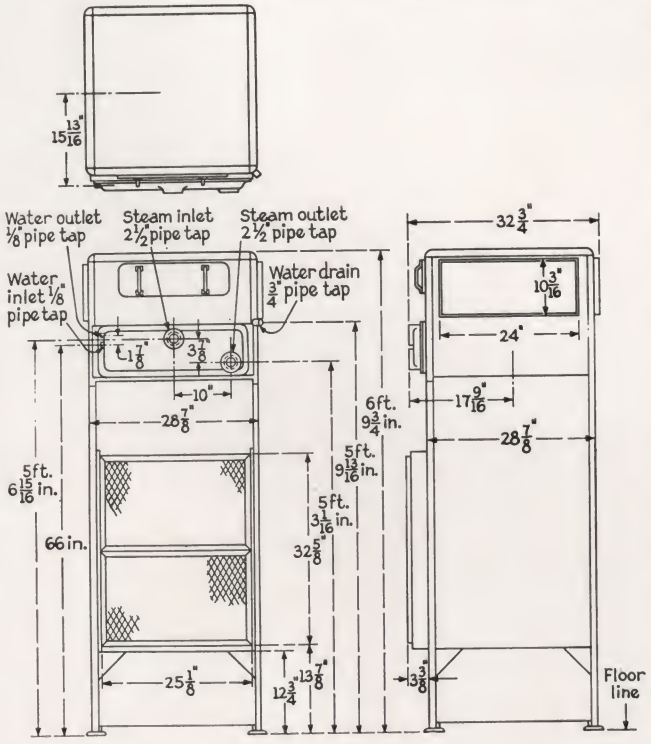
Model Nos.
21AA-3A6 for 60-cycle operation.
21AA-3A5 for 50-cycle operation.

Ratings
(for complete ratings see back page).

Dimensions
(See Dimensional Drawing on p. 2).

Air Delivery
1200 to 1600 C.F.M. at 70 deg. F. (depending on motor pulley size).

Humidification
Evaporation rate 12.5 lb., or 1.5 gal., of water per hr. when operating continuously Total water consumption 14 gal. per hr.



Dimensional Drawing
G-E Type AA-3 Air Conditioner

Blower
Multivane, double inlet, V-belt driven, sleeve bearings. Wheel diameter —16 in. R.P.M.—650.

Motor (flexibly mounted)
For 60-cycle operation: ⅙ hp., 110 volts, single-phase, 1725 rpm. split-phase.
For 50-cycle operation: ¼ hp., 110 volts, single-phase, 1450 rpm. split-phase.

Electric Consumption
150 to 195 watts, total, depending on fan speed.

Filters
Two, 16 in. by 25 in., viscous-coated steel wool. Total area, 5.5 sq. ft.

Magnet Valve
⅛-in. pipe tap connections; 18-volt coil for operating solenoid. Water flow is adjusted by a standard needle valve, connected in the line to the magnet valve.

Humidifying Water Heater
¼-in. copper tube loop in steam inlet manifold for heating coils.

Strainer
⅛-in. pipe tap openings, replaceable screen.

Heat Exchanger
U-shaped copper coils with copper fins, silver soldered to steam chest.

Humidifier
Perforated brass drip pan allows heated water to drip over series of galvanized wire mesh screens. Surplus water carried to drain. Bosses around perforations on underside of drip pan prevent clogging of holes.

Steam Connections
2½-in. inlet; 2½-in. return.

Water Supply to Humidifier
⅛-in. pipe size.

Drain
¾-in. pipe tap.

Net Weight
600 lb. approx.

Acoustic Treatment
Sonic filter above blower made of parallel plates of insulating board. Sound insulation, on inside of side panels opposite inlets to blower, is muslin-covered rock wool.

Heat Exchanger Thermostat
A thermostatic switch with temperature bulb inserted in the heating coils of the air conditioner.

OPERATION OF CONTROLS

A specially designed system of General Electric controls governs the operation of the air conditioning system. It consists essentially of the General Electric Thermal Control (room thermostat with electric clock and time switch for night and day settings), Humidistat, and the General Electric Air Conditioner Control panel and the Heat Exchanger Thermostat. These are in addition to the standard built-in operating and safety controls of the G-E Oil or Gas Furnaces.

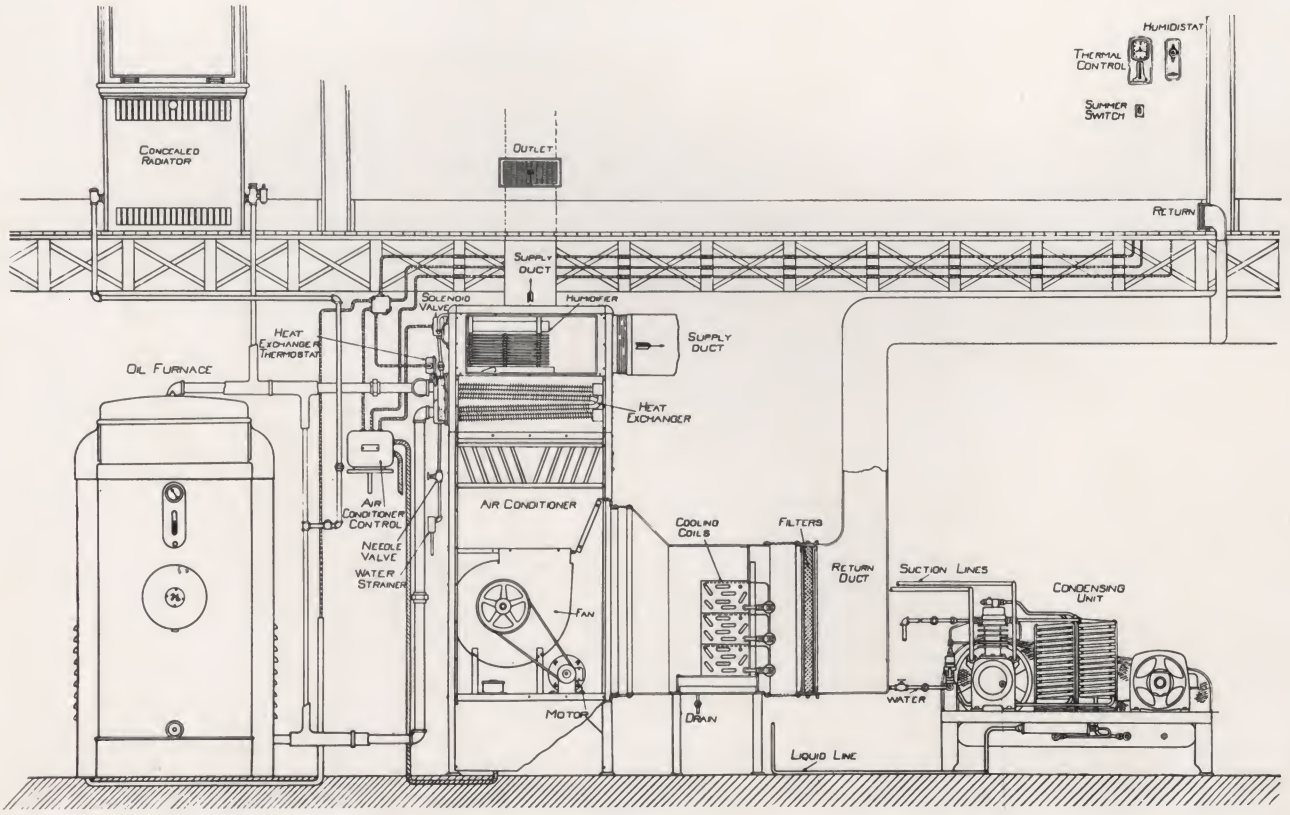
The operation of the control system is as follows:

When the room temperature drops below the Thermal Control setting, the blower in the air conditioner starts, *provided* the heat exchanger is hot (approx. 206 deg. F. or more), and delivers heated air to the duct system. If the heat exchanger is *not* hot, the combined action of the Thermal Control and Heat Exchanger Thermostat starts the Oil Furnace or Gas Furnace, and as soon as the proper heat exchanger temperature is reached, the Heat Exchanger Thermostat permits the blower to start, thus preventing the blowing of cold air.

As soon as the room temperature rises to the setting of the Thermal Control, the blower is stopped but the Furnace continues to operate until the temperature of the heat exchanger reaches an upper limit (about 230 deg. F.), at which point the Heat Exchanger Thermostat stops the Furnace. The Furnace will not start again until the temperature of the heat exchanger has been reduced by the action of the blower to the lower setting of the Heat Exchanger Thermostat, and *at the same time* the Thermal Control is causing the blower to operate.

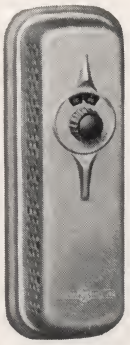
Thus, in effect, the Furnace operates intermittently to store up a supply of steam in the Furnace, piping and heat exchanger, and then does not operate again until this steam has been condensed, and the Thermal Control calls for operation of the blower and another supply of steam. This method of control prevents extremely short operating periods for the Furnace and the loss in efficiency that would result therefrom.

If it is desired to use the Thermal Control for operating the blower for summer air circulation a snap switch may be installed to prevent operation of the Furnace. If the system is to be used for summer cooling, a suitable switch may be installed to manually start the condensing unit and blower, or to permit the Thermal Control to actuate the condensing unit.

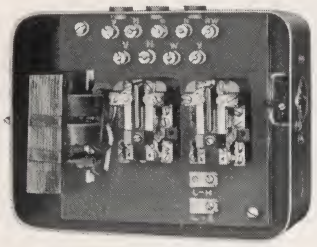


Schematic Cross Section of G-E Air Conditioning System Arranged for Year 'Round Service
(For Winter Service Only, the Condensing Unit and Cooling Coils in Return Duct Would Not Be Employed)

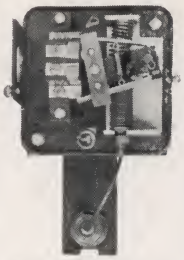
G-E Thermal Control



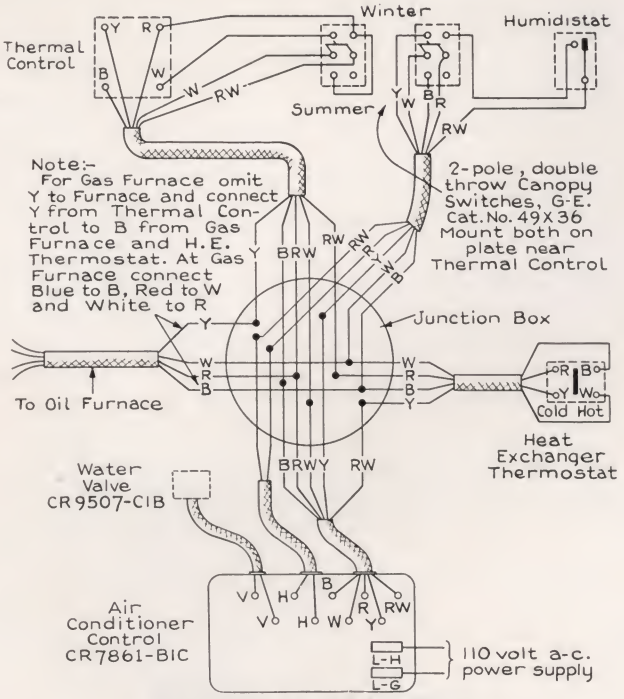
Humidistat



Coördinated Control Box



Heat Exchanger Thermostat



ELECTRICAL CONNECTIONS
one Type AA-3 Air Conditioner with one G-E Oil or Gas Furnace

RATING TABLES

G-E Air Conditioning System

Standard Ratings of Type AA-3 Air Conditioner:

Motor Pulley Size	Heat Output-BTU./Hr.		C.F.M. 70 Deg. F. Air
	At Unit	At Registers	
3.0 in.	130,000	117,000	1600
2.6 in.	115,000	103,500	1400
2.4 in.	100,000	90,000	1200

Cooling Ratings:

The ratings given below represent maximum cooling ratings obtainable at the Air Conditioner with the General Electric cooling attachment and General Electric Type CM-8W 5 hp. condensing unit with 80 deg. F. condenser water located alongside of the unit. Lower ratings may be obtained by using combinations of General Electric Unit Evaporators with a General Electric 2 hp. or a 3 hp. Condensing Unit. These ratings are based on an $8\frac{1}{8}$" P. D. blower pulley in place of the standard $9\frac{1}{2}$" P. D. pulley.

Pulley Size	3.0 in.	2.6 in.	2.4 in.
Cooling Rating BTU/hr.	42,500	40,000	37,500

Domestic Hot Water Ratings with G-E Oil Furnace:

Type of Furnace	Tank Size Gals.	Daily Output Residential Usage, Gals. Per Day	
		Vertical Tank	Horizontal Tank
Steam or Vapor Type LA-4 or 5	30	175	...
	40	225	...
	50	250	...
	66	300	275
	82	350	300
	120	...	350
	150	...	400

Split System Ratings with G-E Oil Furnaces, Types LA-4 and LA-5:

When standing radiation is used in conjunction with the Type AA-3 Air Conditioner, the following ratings apply. These ratings are based on the use of the standard water heating coil in the General Electric Oil Furnace. For both the Gas and Oil Furnace they include an allowance of 47 per cent of standing radiation to allow for pipe tax and pick-up for the connected radiators.

Number of Conditioners	Motor Pulley	BTU/Hr. of Air Cond.	Max. Sq. Ft. Standing Steam Radiation	
			LA-4	LA-5
1	3.0 in.	130,000	None	410
1	2.6 in.	115,000	20	450
1	2.4 in.	100,000	70	495
2	3.0 in.	260,000	..	None
2	2.6 in.	230,000	..	110
2	2.4 in.	200,000	..	210

Split System Ratings with G-E Gas Furnace

No. of Conditioners	Motor Pulley	BTU/Hr. of Air Cond.	MAX. SQ. FT. STANDING STEAM RADIATION								
			RM-24	RM-25	RM-26	RK-43	RK-54	RK-65	RK-76	RK-87	RK-98
1	3.0 in.	130,000	....	40	145	50	200	350	500	650	800
1	2.6 in.	115,000	....	80	190	95	245	395	545	695	840
1	2.4 in.	100,000	15	125	230	135	290	440	585	735	885
2	3.0 in.	260,000	....	....	....	....	....	....	105	255	405
2	2.6 in.	230,000	....	....	....	....	....	40	190	340	490
2	2.4 in.	200,000	....	....	....	....	....	125	275	425	575
3	3.0 in.	390,000	....	....	....	....	....	....	....	....	10
3	2.0 in.	345,000	....	....	....	....	....	....	....	....	135
3	2.4 in.	300,000	....	....	....	....	....	....	....	110	260

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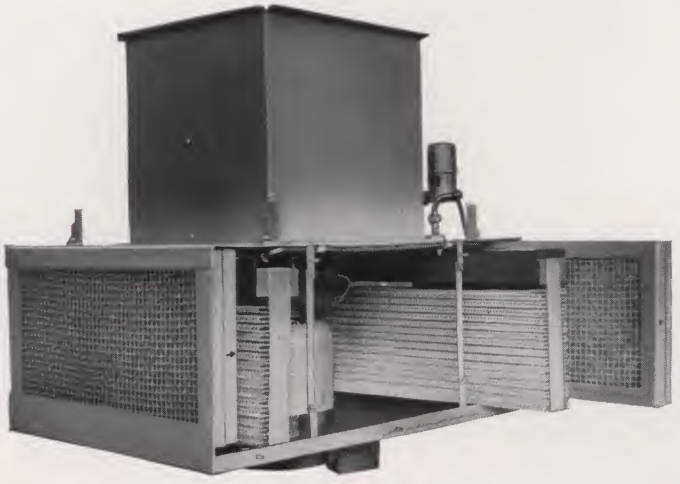
Specifications

GENERAL ELECTRIC

AIR CONDITIONER

Type AC-1

Exterior View G-E Air Conditioner Type AC-1



Type AC-1 Air Conditioner, View Showing Interior Construction

This unit is to be used in conjunction with the heating system already installed.

Functions

Humidifying
Filtering
Circulating

Application

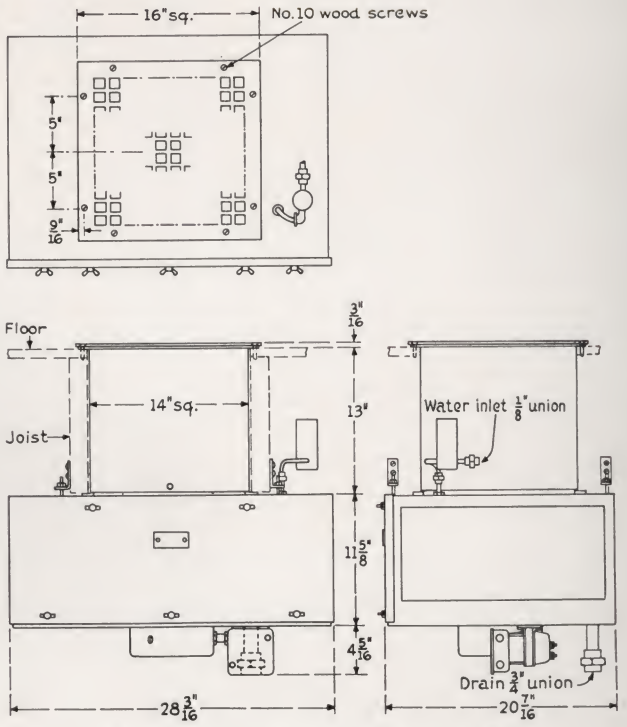
To radiator heated houses using steam or hot water heating systems.

Ratings

Air movement—400 cfm. (free delivery)
350 cfm. (against static head in ducts of .03 in. water)

Filtering—Cleans approx. 15,000 cu. ft. volume on first floor

Humidification—evaporates 8½ lb. (1 gal.) water per hour when applied to steam systems with boiler water at 190 deg. F. and 6¾ lb. (.8 gal.) water per hour when applied to hot water systems with boiler water at 160 deg. F. Both rates based on 12½ gal. per hour water flow through unit



Dimensions—Air Conditioner Type AC-1

Fan

Propeller type, 3 blade, exclusive G-E Design with laminated blades for quiet and efficient operation. 10 in. dia. Direct driven

Motor

Type—split phase induction type
Rating—1/50 hp., 1050 rpm., 110 volts, 60 cycles, single phase
Mounting—Flexible vertical mounting. Supported top and bottom by 2 coil springs on center line of shaft
Bearings—sleeve—waste packed
Oiling—about every 2 months with continuous operation

Electrical Consumption

Fan only—40 watts (Approx.)
Fan and Humidifier—50 watts (Approx.)

Water Consumption

10 to 15 gals. per hour while humidifying

Filters

Type—dry pre-oxidized steel wool in light metal frames
Area—total 2 sq. ft., 2 frames consisting each of 1 sq. ft.

Humidifier

Type—Evaporator
Drip pans—Brass
Drip screens—¼ in. mesh, galvanized
Drain pan—Brass

Heat Demand (*for humidifying*)

10,000 Btu. per hour (Supplied by external indirect water heater installed below water line of existing boiler. Heater part of Standard Equipment)

Solenoid Valve

Electrical—24 volts—60 cycle (from transformer on unit)
Water Flow—Adjustable 5 to 30 gal. per hour

Miscellaneous

Water Supply—⅛ in. (pipe union)
Strainer—(in water supply) ¼ in. pipe tap inlet and outlet
Drain—¾ in. (pipe union)
Weight—130 lb. complete
Finish—Gray enameled steel case

Control

Circulation and Cleaning—manual control of fan motor by wall mounted snap switch
Humidification—automatic addition of moisture by humidistat operating solenoid valve.

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Specifications

GENERAL ELECTRIC
ROOM AIR CONDITIONER
Type AD-3

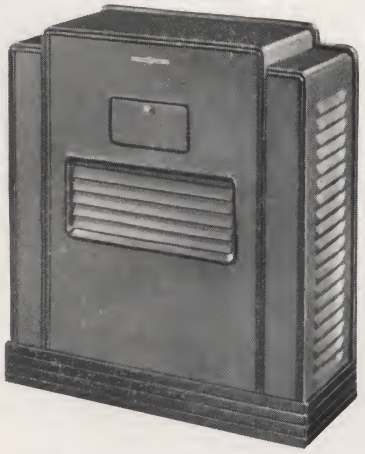
General

The General Electric Room Air Conditioner, Type AD-3, for remote connection, is designed for year round comfort air conditioning applications where the following functions are required:

Summer—Cooling and Dehumidifying
Winter—Heating and Humidifying
Year Round—Ventilating, Circulating and Filtering

The Room Air Conditioner consists of an attractive steel cabinet, finished in walnut, enclosing a cooling coil and expansion valve (for Freon refrigerant), a heating coil and electric valve, a humidifying unit, two-speed blowers, control panel, filters, drain pan, ventilating duct and sufficient connections to make a complete air conditioning unit. It may be directly connected with direct expansion of the refrigerant from a remote condensing unit of sufficient capacity, either singly or in multiple with other room coolers or room air conditioners, or it may use circulating cold water as the refrigerating medium. It may be connected to steam or circulating hot water for heating and humidifying purposes.

Control is automatic with manual selection and is interlocked to prevent incorrect combinations of air conditioning functions. Thermostatic control is required but thermostats must be ordered as extra equipment. Humidistats may be ordered if desired.



Cabinet
- Type.....Removable
- Material.....Sheet steel
- Finish.....Walnut
- Height.....Adjustable

Blowers
- Number.....Two
- Type.....Double inlet, multivane
- Size.....6-inch diameter wheels

Blower Motors
- D-c.....Tapped series, Type BC
- A-c.....Capacitor, Type KC
- Power consumption.....100 watts at 60 cycles

Cooling and Heating Surfaces

Finned copper tubing

Expansion Valve
- Type.....Thermostatic, non-adjustable
- Pressure limit.....40 lb. per sq. in. gauge

Heat Control Valve
- Type.....Motor operated
- Voltage, d-c.....115
- a-c.....110

Humidifier
- Type.....Open pan
- Operation.....Hot water or steam heated

Filters
- Type.....Viscous coated glass wool
- Number.....3

Automatic Controls

Thermostats, available on order
- A-c. Thermal Control, Bronze or Silver Finish
- Single Blade, Model No. 21NA1A1 (Low Voltage)
- D-c. Single Blade, Cat. No. 65X617 (High Voltage)

Humidistat, available on order
- A-c. or D-c. Cat. No. 5182130G1 (Silver), -G2 (Bronze)

Shipping Weight

455 lb. approximately.

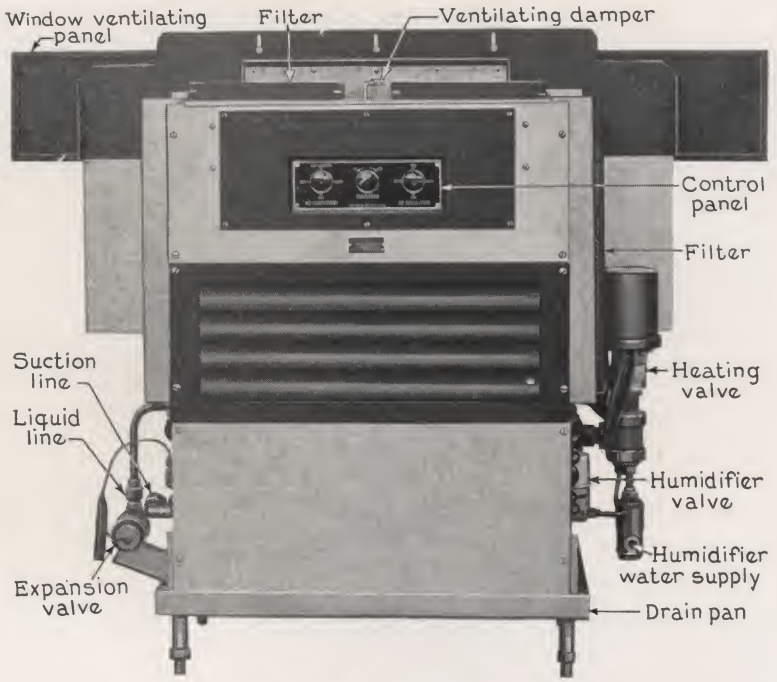
PERFORMANCE CHARACTERISTICS

Cooling Medium	Heating Medium	Room Air Conditioner Model No.	Blower Motor					RATINGS					
								Air Circulation		Cooling(1)		Heating(2)	Humidifying(2)
								Max. Total	Max. Ventilation	Total	Latent		
			Volts	Phase	Cycles	Nominal Rpm.	Hp.	Cfm.	Cfm.	Btu/hr.	Btu/hr.	Btu/hr.	Lb./hr.
Freon	Steam	21AD3A1	110	1	60	820		200	75	7100	2650	11500	1.8
		21AD3A2	115	d-c.	..	820	1/60	200	75	7100	2650	11500	1.8
		21AD3A3	110	1	50	820		200	75	7100	2650	11500	1.8
	Hot Water	21AD3B1	110	1	60	820		200	75	7100	2650	9000	1.8
		21AD3B2	115	d-c.	..	820	1/60	200	75	7100	2650	9000	1.8
		21AD3B3	110	1	50	820		200	75	7100	2650	9000	1.8
Water	Steam	21AD3D1	110	1	60	820		200	75	7600	2850	11500	1.8
		21AD3D2	115	d-c.	..	820	1/60	200	75	7600	2850	11500	1.8
		21AD3D3	110	1	50	820		200	75	7600	2850	11500	1.8
	Hot Water	21AD3E1	110	1	60	820		200	75	7600	2850	9000	1.8
		21AD3E2	115	d-c.	..	820	1/60	200	75	7600	2850	9000	1.8
		21AD3E3	110	1	50	820		200	75	7600	2850	9000	1.8

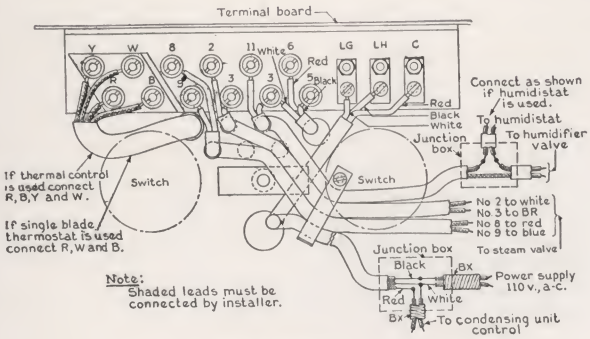
(1) Conditions of Cooling Rating	Freon	Water
Entering air dry bulb temperature, deg. F.	80	80
Entering air wet bulb temperature, deg. F.	67	67
Average refrigerant temperature, deg. F.	32	
Inlet water temperature, deg. F.		40
Outlet water temperature, deg. F.		45
Water circulation, gal. per min.		3
Water pressure drop, lb. per sq. in.		2.5

(2) Conditions of Heating and Humidifying Rating	Steam	Hot Water
Entering air dry bulb temperature, deg. F.	70	70
Entering air wet bulb temperature, deg. F.	58.5	58.5
Steam pressure, lb. per sq. in. gauge	2	
Average hot water temperature, deg. F.		180
Water circulation, gal. per min.		1
Water pressure drop, lb. per sq. in. gauge		2
Humidifier water supply, lb. per hr.	20	20

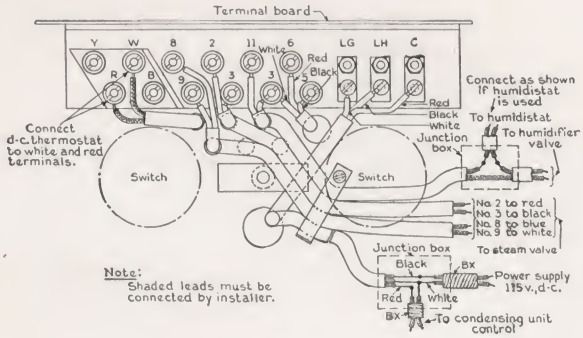
NOTE: For conditions other than given above, a correction must be applied to obtain actual capacities.



Type AD-3 with Cabinet Removed

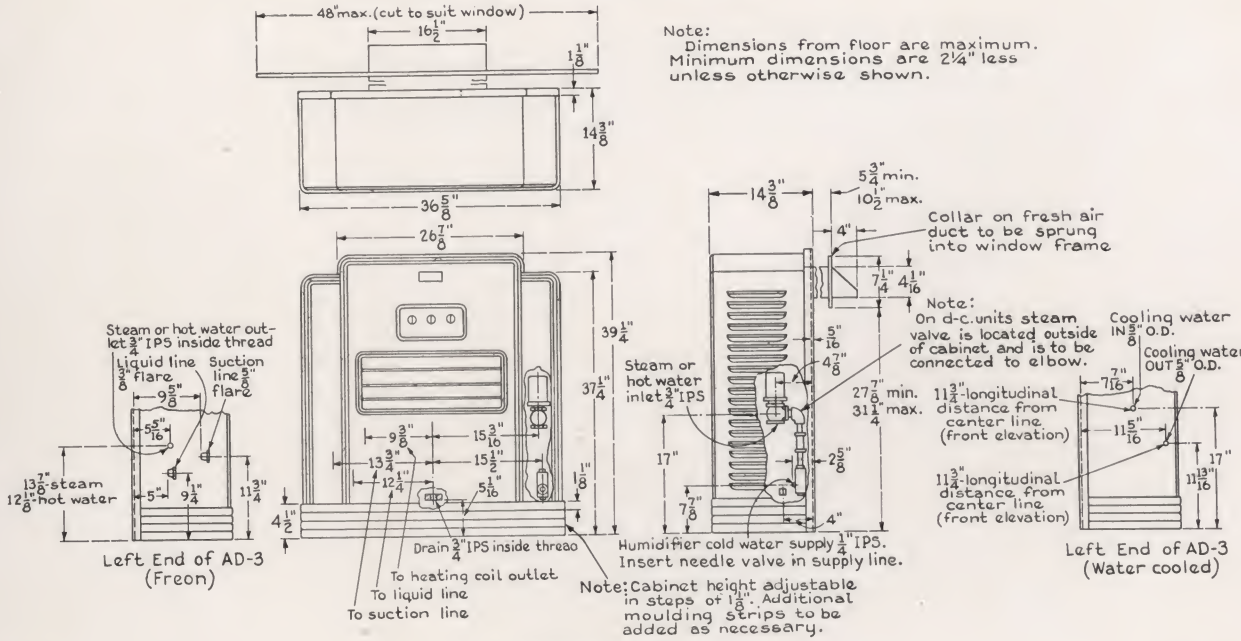


A-c. Service



D-c. Service

Electrical Connections



Connections and Dimensions

Specifications

GENERAL ELECTRIC

ROOM AIR CONDITIONER

Type AD-4

General

The General Electric Room Air Conditioner, Type AD-4, for remote connection, is designed for year round comfort air conditioning applications where the following functions are required:

Summer—Cooling and Dehumidifying
Winter—Heating and Humidifying
Year Round—Ventilating, Circulating and Filtering

The Room Air Conditioner consists of an attractive steel cabinet, finished in walnut, enclosing a cooling coil, heat interchanger and expansion valve (for Freon refrigerant), a heating coil and electric valve, a humidifying unit, two-speed blowers, control panel, filters, drain pan, ventilating duct and sufficient connections to make a complete air conditioning unit. It may be directly connected with direct expansion of the refrigerant from a remote condensing unit of sufficient capacity, either singly or in multiple with other room coolers or room air conditioners, or it may use circulating cold water as the refrigerating medium. It may be connected to steam or circulating hot water for heating and humidifying purposes.

Control is automatic with manual selection and is interlocked to prevent incorrect combinations of air conditioning functions. Thermostatic control is required but thermostats must be ordered as extra equipment. Humidistats may be ordered if desired.

Cabinet

Type.....Removable
Material.....Sheet steel
Finish.....Walnut
Height.....Adjustable

Blowers

Number.....Four
Type.....Double inlet, multivane
Size.....6-inch diameter wheels

Blower Motors

D-c.....Tapped Series, Type BC
A-c.....Capacitor, Type KC
Power consumption.....100 watts at 60 cycles

Cooling and Heating Surfaces

Finned copper tubing

Expansion Valve

Type.....Thermostatic, non-adjustable
Pressure limit.....40 lb. per sq. in. gauge

Heat Control Valve

Type.....Motor operated
Voltage, d-c.....115
a-c.....110

Humidifier

Type.....Open pan
Operation.....Hot water or steam heated

Filters

Type.....Viscous coated glass wool
Number.....4

Automatic Controls

Thermostats, available on order
A-c. Thermal Control, Bronze or Silver Finish
Single Blade, Model No. 21NA1A1 (Low Voltage)
D-c. Single Blade, Cat. No. 65X617 (High Voltage)
Humidistat, available on order
A-c. or D-c. Cat. No. 5182130G1 (Silver), -G2 (Bronze)

Shipping Weight

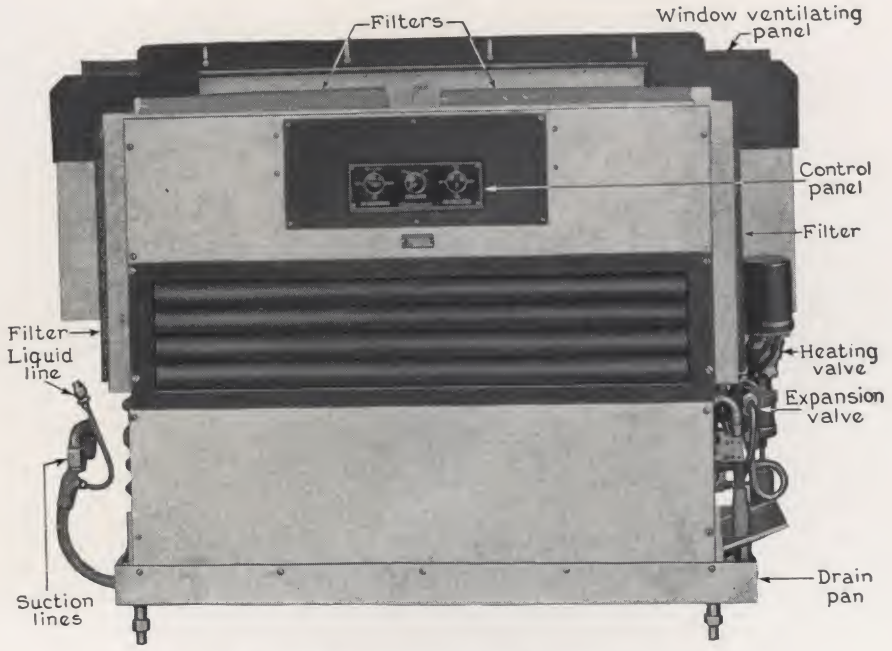
515 lb. approximately.

PERFORMANCE CHARACTERISTICS

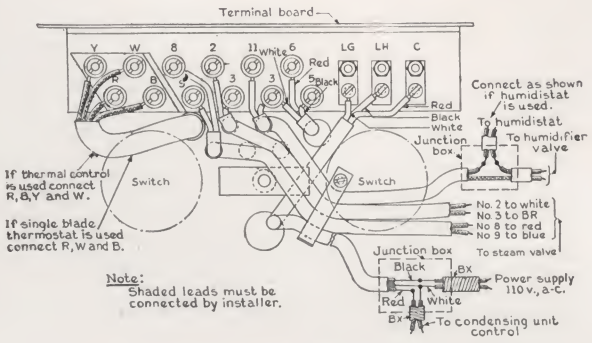
Cooling Medium	Heating Medium	Room Air Conditioner Model No.	Blower Motor					Ratings					
								Air Circulation		Cooling (1)		Heating(2)	Humidifying(2)
								Max. Total	Max. Ventilation	Total	Latent		
			Volts	Phase	Cycles	Nominal Rpm.	Hp.	Cfm.	Cfm.	Btu/hr.	Btu/hr.	Btu/hr.	Lb./hr.
Freon	Steam	21AD4A1	110	1	60	820	1/30	450	130	15000	5200	21000	3.0
		21AD4A2	115	..	d-c.	820		450	130	15000	5200	21000	3.0
		21AD4A3	110	1	50	820		450	130	15000	5200	21000	3.0
	Hot Water	21AD4B1	110	1	60	820	1/30	450	130	15000	5200	19000	3.0
		21AD4B2	115	..	d-c.	820		450	130	15000	5200	19000	3.0
		21AD4B3	110	1	50	820		450	130	15000	5200	19000	3.0
Water	Steam	21AD4D1	110	1	60	820	1/30	450	130	15000	5200	21000	3.0
		21AD4D2	115	..	d-c.	820		450	130	15000	5200	21000	3.0
		21AD4D3	110	1	50	820		450	130	15000	5200	21000	3.0
	Hot Water	21AD4E1	110	1	60	820	1/30	450	130	15000	5200	19000	3.0
		21AD4E2	115	..	d-c.	820		450	130	15000	5200	19000	3.0
		21AD4E3	110	1	50	820		450	130	15000	5200	19000	3.0

(1) Conditions of Cooling Rating	Freon	Water	(2) Conditions of Heating and Humidifying Rating	Steam	Hot Water
Entering air dry bulb temperature, deg. F.	80	80	Entering air dry bulb temperature, deg. F.	70	70
Entering air wet bulb temperature, deg. F.	67	67	Entering air wet bulb temperature, deg. F.	58.5	58.5
Average refrigerant temperature, deg. F.	32		Steam pressure, lb. per sq. in. gauge	2	
Inlet water temperature, deg. F.		40	Average hot water temperature, deg. F.		180
Outlet water temperature, deg. F.		46	Water circulation, gal. per min.		2
Water circulation, gal. per min.		5	Water pressure drop, lb. per sq. in. gauge.		2
Water pressure drop, lb. per sq. in.		9	Humidifier water supply, lb. per hr.	35	35

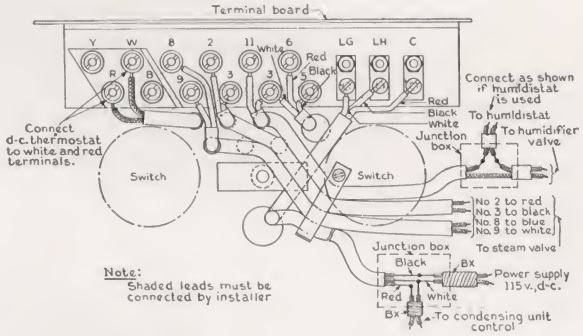
NOTE: For conditions other than given above, a correction must be applied to obtain actual capacities.



Type AD-4 with Cabinet Removed

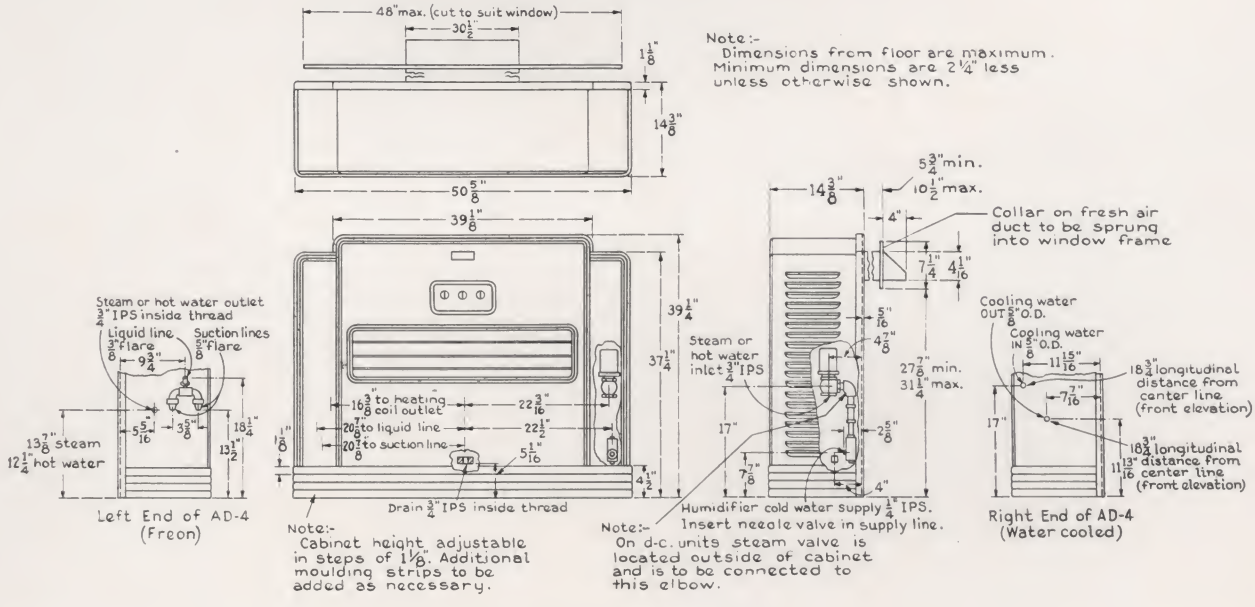


A-c. Service



D-c. Service

Electrical Connections



Connections and Dimensions

Specifications

GENERAL ELECTRIC

UNIT ROOM AIR CONDITIONER

Type FR-1

General

The General Electric Unit Room Air Conditioner, Type FR-1, completely self contained, is designed for year round comfort air conditioning applications where the following functions are required:

Summer—Cooling and Dehumidifying

Winter—Heating and Humidifying

Year Round—Ventilating, Circulating and Filtering

The Unit Room Air Conditioner consists of an attractive steel cabinet enclosing a water-cooled condensing unit encased in a sound-proof cabinet, together with a cooling coil and expansion valve, heating coil and electric valve, humidifying unit, two-speed blowers, control panel, filters, drain pan, ventilating duct and sufficient connections to make a complete self-contained air conditioning unit. It may be connected to steam or circulating hot water for heating and humidifying purposes.

Control is automatic with manual selection and is interlocked to prevent incorrect combinations of air conditioning functions. Thermostatic control is required but thermostats must be ordered as extra equipment. Humidistats may be ordered if desired.

Blower

Type.....Double inlet multivane
Number.....Two
Diameter.....6 inches
Nominal speed.....820 rpm.

Blower Motor

A-c.....Capacitor, Type KC
D-c.....Tapped series, Type BC
Power consumption.....100 watts at 60 cycles

Cooling and Heating Surfaces

Finned copper tubing

Expansion Valve

Type.....Thermostatic, non-adjustable
Pressure limit.....40 lb. per sq. in. gauge

Heat Control Valve

Type.....Motor operated
Voltage, A-c.....110
D-c.....115

Humidifier

Type.....Open pan
Operation.....Hot water or steam heated

Filters

Type.....Viscous coated glass wool
Number.....3

Automatic Controls

Thermostats, available on order
A-c. Thermal Control Bronze or Silver finish
Single Blade, Model No. 21NA1A1 (Low Voltage)
D-c. Single Blade, Cat. No. 65X617 (High Voltage)
Humidistat, available on order
A-c. or D-c. Cat. No. 5182130G1 (Silver), -G2 (Bronze)

Compressor

Cylinders.....2
Bore.....2 inches
Stroke.....2½ inches
Speed.....390 rpm.

Compressor Motor

Size.....1 hp.
D-c.....Compound wound, Type BC
A-c.....Repulsion induction, Type SCR
Speed at 60 cycles or d-c....1725 rpm.
Speed at 50 cycles.....1425 rpm.

Compressor Control

D-c. motor starter.....Across-the-line magnetic type
A-c. motor starter.....Across-the-line magnetic type
Overload protection.....Thermal overload relay in switch
Head pressure safety cutout.Actuated by condenser pressure
Back pressure control.....Actuated by suction pressure

Refrigerant Charge

Refrigerant.....Freon
Normal charge.....5.5 lb.
Maximum for proper operation.....6.17 lb.
Minimum for proper operation.....1.5 lb.
Oil charge.....5.25 pints

Condenser

Double copper coil, counter flow

Drive

Five "V" belts

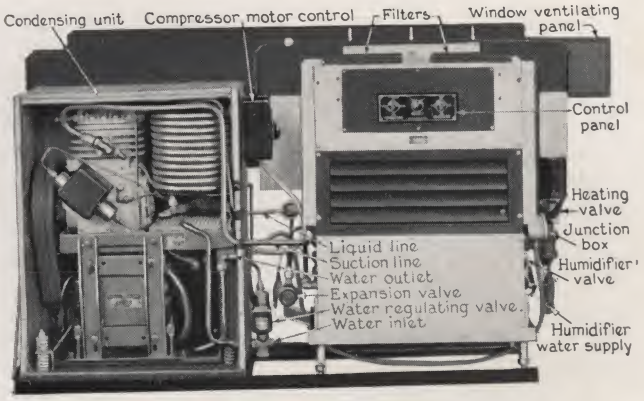
PERFORMANCE CHARACTERISTICS

Heating Medium	Ratings										
	Air Circulation		Cooling(1)							Heating(2)	Humidifying(2)
	Max. Total	Max. Ventilation	Condenser Cooling Water Temperature	Total	Latent	Refrigerant Temperature	Head Pressure	Water Consumption	Power Consumption		
	Cfm.	Cfm.	Deg. F.	Btu/hr.	Btu/hr.	Deg. F.	Lb./Sq. In	Gpm.	Kw.	Btu/hr.	Lb./hr.
Steam	200	75	60	8600	3600	27.0	110	1.50	1.19	11500	1.8
			70	8500	3400	27.5	120	1.75	1.23		
			80	8350	3200	28.0	130	2.00	1.27		
			90	8200	3000	28.5	140	2.25	1.29		
Hot Water	200	75	60	8600	3600	27.0	110	1.50	1.19	9000	1.8
			70	8500	3400	27.5	120	1.75	1.23		
			80	8350	3200	28.0	130	2.00	1.27		
			90	8200	3000	28.5	140	2.25	1.29		

(1) Conditions of Cooling Rating	Freon
Entering air dry bulb temperature, deg. F.	80
Entering air wet bulb temperature, deg. F.	67

(2) Conditions of Heating and Humidifying Rating	Steam	Hot Water
Entering air dry bulb temperature, deg. F.	70	70
Entering air wet bulb temperature, deg. F.	58.5	58.5
Steam pressure lb. per sq. in. gauge	2	
Average hot water temperature, deg. F.		180
Water circulation, gal. per min.		1
Water pressure drop, lb. per sq. in.		2
Humidifier water supply, lb. per hr.	20	20

NOTE: For conditions other than given above, a correction must be applied to obtain actual capacities.

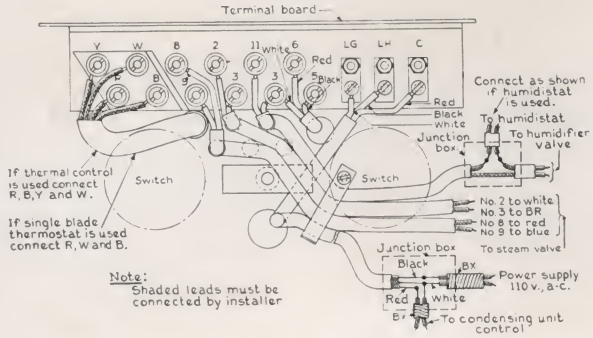


Type FR-1 with Cabinet Removed

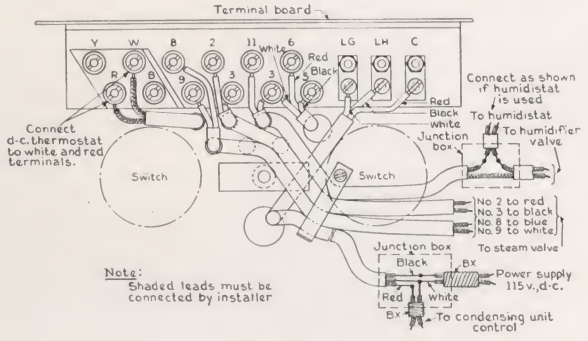
MODEL NUMBERS

Unit Room Air Conditioner Model No.		Power Supply: Fans and Control Volts	Phase	Cycles	Condensing Unit Volts	Phase	Cycles	Model No.
21FR1A1	Steam	110	1	60	220/110†	1	60	CM57B26
21FR1A2	Steam	115	—	d-c.	230	—	d-c.	CM57B2
21FR1A3	Steam	110	1	50	220/110†	1	50	CM57B25
21FR1A4	Steam	110	1	60	208	3	60	CM57B51
21FR1B1	Hot Water	110	1	60	220/110†	1	60	CM57B26
21FR1B2	Hot Water	115	—	d-c.	230	—	d-c.	CM57B2
21FR1B3	Hot Water	110	1	50	220/110†	1	50	CM57B25
21FR1B4	Hot Water	110	1	60	208	3	60	CM57B51

† NOTE: Order Heater 81D137 for 110 volts.

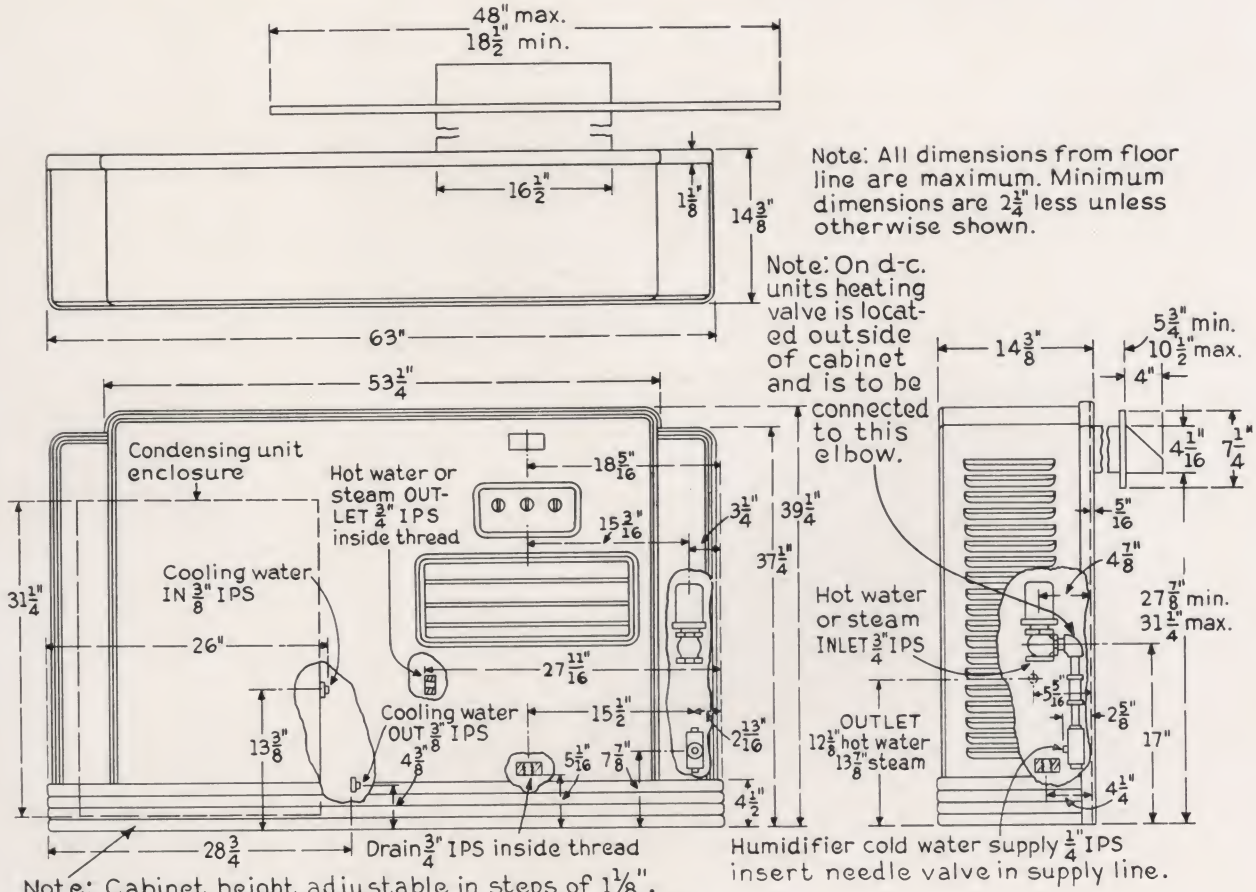


A-c. Service



D-c. Service

Electrical Connections



Connections and Dimensions

Specifications

GENERAL ELECTRIC

FLOOR MOUNTED ROOM COOLERS

TYPES AG-1 AND AG-2

General

The General Electric Room Coolers, Types AG-1 and -2, for floor mounting are designed primarily for comfort cooling applications where the following air conditioning functions are required:

1. Cooling
2. Dehumidifying
3. Circulating

These room coolers consist of an outer steel cabinet, finished in natural walnut wood grain, containing a finned tube cooling unit, heat interchanger and thermostatic expansion valve (for direct expansion only), motor-driven fan and condensate drip pan. They may be directly connected with direct expansion of refrigerant from a remote condensing unit, either singly or in multiple with other Room Coolers or Room Air Conditioners or they may use circulating cold water as the refrigerating medium. Control may be manual or thermostatic. Moisture removed from the air is carried away through a drain. The cabinet is exactly the same for both the AG-1 and -2 and is removable for installation of refrigerant lines and wiring.

Cabinet

Sheet metal; walnut wood grained finish. Cabinet may be lifted off without disturbing unit. Height of cabinet may be increased in steps of 1⅛ in. by adding strip mouldings, if necessary.

Fan

General Electric 10-in. aphonic pressure type propeller fan.

Fan Motor

General Electric 1/100 hp. resistance split-phase type for a-c. service and constant-speed compound-wound for d-c. service, spring mounted to insure a minimum of vibration and quietness of operation.

Cooling Surface

Finned copper tubing dipped in solder.

The AG-2 has two cooling coils connected in parallel. The AG-1 is the same as the AG-2 except that one coil is removed and replaced with a perforated metal plate to give the same air flow from each end.

Expansion Valve

Automatic thermostatic expansion type with pressure limiting device for overload protection provided on units designed for Freon.

Heat Interchanger

Single heat interchanger for either AG-1 or -2 furnished for Freon units, consisting of a double copper tube coil. Cold refrigerant vapor from the cooling coil passes through the inner tube to the suction lines and is warmed by the warm liquid refrigerant which flows in the outer tube in the space between the two walls to the expansion valve. The effect of this heat interchanger is to increase the capacity of the refrigerating system and to prevent sweating of the suction line.

Electrical Connections

Provision is made on the unit for necessary electrical connections and a switch is provided which is accessible through the cabinet top for starting and stopping the fan motor and condensing unit together or the fan motor alone.

Thermostatic control may be provided as optional equipment. Provision is made in the switch and terminal board for adding a solenoid valve when required.

Dimensions

Length, inches 31
Depth, inches 17½
Height, inches 31½

Weight

	AG-1		AG-2	
	Net	Shipping	Net	Shipping
Unit, lb.		110		130
Cabinet, lb.		80		80
Total, lb.	160	190	180	210

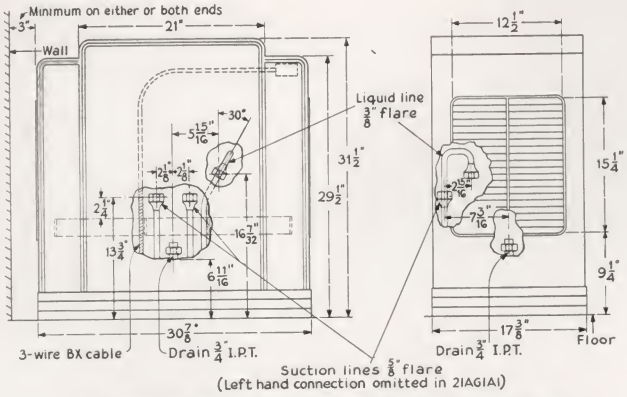
SUMMARY OF CHARACTERISTICS

Cooling Medium	Room Cooler Type	Room Cooler Model	Fan Motor					Air Circulation	Piping Connections				Condensate Drain		Cooling Rating*
									Cooling Supply		Medium Outlet				
		No.	Volts	Phase	Cycles	Rpm.	Hp.	Cfm.	No.	Size	No.	Size	No.	Size	Btu. per Hr.
Freon	AG-1	21AG1A1	110	1	60	800	1/100	475	1	3/8 SAE	1	5/8 SAE	1	3/4 IPS	7400
		21AG1A2	115	-	d-c.	800	1/100	475	1	3/8 SAE	1	5/8 SAE	1	3/4 IPS	7400
		21AG1A3	110	1	50	900	1/100	535	1	3/8 SAE	1	5/8 SAE	1	3/4 IPS	7900
	AG-2	21AG2A1	110	1	60	800	1/100	475	1	3/8 SAE	2	5/8 SAE	1	3/4 IPS	14800
		21AG2A2	115	-	d-c.	800	1/100	475	1	3/8 SAE	2	5/8 SAE	1	3/4 IPS	14800
		21AG2A3	110	1	50	900	1/100	535	1	3/8 SAE	2	5/8 SAE	1	3/4 IPS	15800
Water	AG-1	21AG1B1	110	1	60	800	1/100	475	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	8000
		21AG1B2	115	-	d-c.	800	1/100	475	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	8000
		21AG1B3	110	1	50	900	1/100	535	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	8600
	AG-2	21AG2B1	110	1	60	800	1/100	475	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	15900
		21AG2B2	115	-	d-c.	800	1/100	475	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	15900
		21AG2B3	110	1	50	900	1/100	535	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	17000

*Conditions of Cooling Rating:	Freon	Water
Entering air dry bulb temperature, deg. F.	80	80
Entering air wet bulb temperature, deg. F.	67	67
Average refrigerant temperature, deg. F.	32	
Inlet water temperature, deg. F.		40

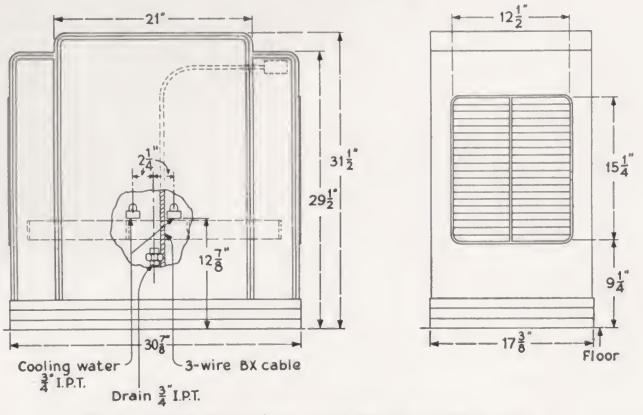
*Conditions of Cooling Rating:	Freon	Water
Outlet water temperature with 475 cfm., deg. F.		46.3
Water circulation, gal. per min., Type AG-1		2.5
Water circulation, gal. per min., Type AG-2		5
Water pressure drop, lb. per sq. in.		9

NOTE: For conditions other than these standard rating conditions the actual operating capacity may be more or less than that shown above.



NOTE: Suction and liquid lines, and electrical connection pass through a 1" x 6" notch in front edge of drain pan.

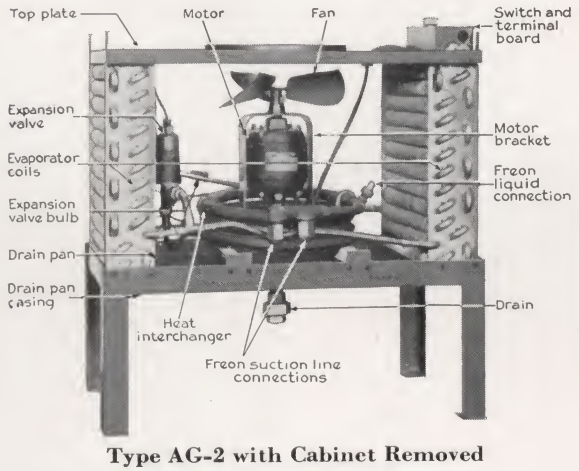
Freon Cooling Medium



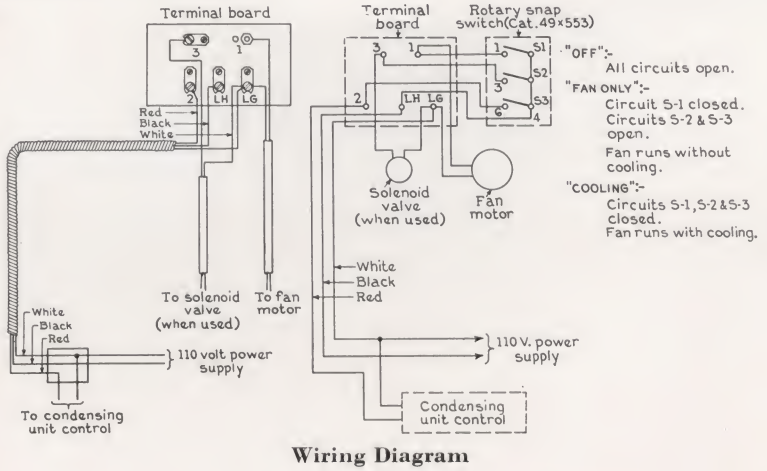
NOTE: Cooling water pipes, and electrical connection pass through a 1" x 6" notch in front edge of drain pan.

Water Cooling Medium

Connections and Dimensions



Type AG-2 with Cabinet Removed



Wiring Diagram

Specifications

GENERAL ELECTRIC

PORTABLE UNIT COOLER

TYPE FC-1

General

The portable unit cooler performs the following Air Conditioning functions:

1. Cooling
2. Dehumidifying
3. Circulating

It consists of a water cooled condensing unit enclosed in a galvanized steel, sound absorbing case, and a cooling unit using a G-E aphonic pressure type fan, all mounted on a common base having rubber tired wheels and enclosed in an artistic steel cabinet. The unit is provided with an electrical cable for plugging into a light circuit, provided same is of No. 14 wire or larger. Flexible hose or copper tubing may be used for connecting to the cooling water supply and drain. Moisture condensed on the cooling surface is collected in a container accessible through a door at the end of the unit. This container may be emptied periodically or connected to a gravity drain through a flexible rubber hose or permanent copper tube. This unit will find its chief application in hotel rooms, bedrooms, and small studies.

Cooling Capacity

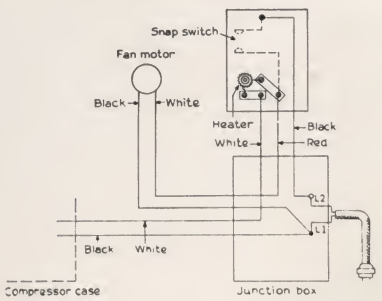
Cooling capacity of the portable unit cooler under standard operating conditions will be as shown in the table of performance ratings below. Cooling capacity, however, varies with the room air temperature, both wet and dry bulb. When temperatures higher than the assumed standard exist in the room (for example, on relatively hot and humid days) the cooling capacity will be somewhat greater than shown.

PERFORMANCE RATINGS

	INGOING WATER TEMPERATURE, DEG. F.			
	60	70	80	90
Cooling Rating*, Btu. per hr.	4800	4725	4650	4600
Dehumidifying Rating*, Gal. per hr.	0.21	0.21	0.21	0.21
Refrigerant Temperature, Deg. F.	31.3	31.8	32.3	32.8
Head Pressure, Lb. per sq. in., max.	105	110	115	120
Water Consumption, Gal. per min.	½	¾	1¼	2½
Power Consumption, Kw.	0.75	0.78	0.80	0.84

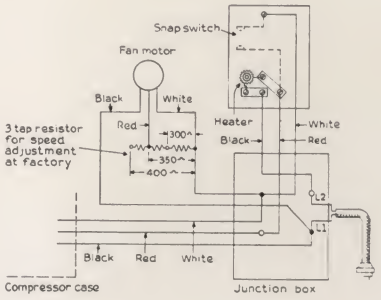
***Conditions of Cooling Rating**

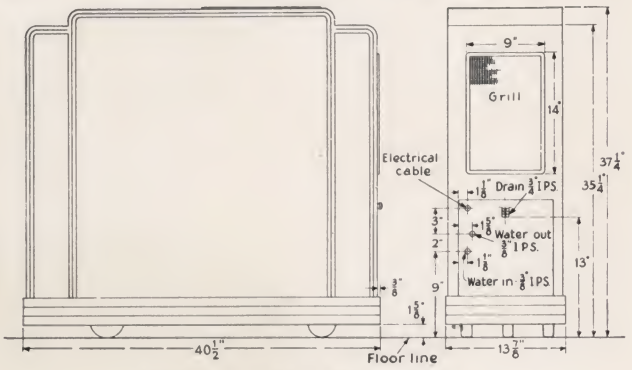
Entering air dry bulb temperature, deg. F. . . . . 80 Entering air wet bulb temperature, deg. F. 67



Wiring Diagram for A-c. Service

Wiring Diagram for D-c. Service





Connections and Dimensions

Model No.

Portable Unit Cooler Model No.	POWER SUPPLY		
	Volts	Phase	Cycles
21FC1A1	110	1	60
21FC1A2	115	—	d-c.
21FC1A3	220	1	60
21FC1A4	110	1	50

Cabinet

Cabinet.....Removable
Material.....Sheet metal
Finish.....Walnut satin
Construction.....Knock down
Length.....41¼ inches
Width.....13⅞ inches
Height.....37¼ inches

Fan

Type.....Aphonic pressure propeller
Diameter.....7 inches
Air Circulation.....200 cfm.

Fan Motor

A-c. motor type.....Shaded pole
D-c. motor type.....Shunt series
Mounting.....Rubber
Speed.....1400 rpm.

Cooling Surface

Finned copper tubing dipped in solder

Expansion Valve

Type.....Automatic thermostatic expansion
Overload setting.....40 lb. per sq. in.
Adjustment.....Non-adjustable

Condensate Receptacle and Drain

Length.....9 inches
Width.....7¾ inches
Height.....10 inches
Capacity.....2¾ gallons
Drain size.....¾ in. outside pipe thread

Cooling Water Connections

Water inlet size.....⅜ in. outside pipe thread
Water outlet size.....⅜ in. outside pipe thread
Hose length.....10 feet
Hose size.....⅜ in. inside pipe thread

Electrical Connections

Type.....Rubber-covered cable
Plug.....Male
Length.....10 feet

Weight

Net.....500 lb.
Shipping.....700 lb.

Control

D-c. motor starter.....Across-the-line magnetic type
A-c. motor starter.....Across-the-line manual type
Overload protection.....Thermal overload relay in starter
Head pressure safety cutout.....Actuated by condenser pressure
Back pressure control.....Actuated by suction pressure

Compressor Motor

Size.....½ hp.
D-c.....Compound wound, type BC
A-c., single phase.....Capacitor, type KC
Speed at 60 cycles or d-c..1725 rpm.
Speed at 50 cycles.....1425 rpm.

Compressor

Type.....G-E CM-47
Cylinders.....2
Bore.....2 inches
Stroke.....1½ inches
Speed.....400 rpm.
Suction valve.....Disc type in valve plate
Discharge valve.....Reed type in valve plate
Suction Service Valve, Size.....½ inch S.A.E. flare
Discharge Service Valve..¼ inch S.A.E. flare
Oil charge.....2½ pints
Valve plate.....Meehanite

Refrigerant Charge

Refrigerant.....Freon
Normal charge.....3½ lb.
Max. for proper operation.4 lb.
Min. for proper operation.1 lb.

Condenser

Double copper coil, counter flow

Drive

Triple "V" belts

Liquid Receiver

Type.....Vertical welded steel
Capacity, lb.....4½ lb. Freon

Valves

Liquid line service valve..¼ inch S.A.E. flare
Suction service valve.....½ inch S.A.E. flare

Specifications

GENERAL ELECTRIC

WALL MOUNTED ROOM COOLER

TYPE AG-4

General

The General Electric Room Cooler, Type AG-4, for wall mounting is designed primarily for comfort cooling applications where the following air conditioning functions are required:

1. Cooling
2. Dehumidifying
3. Circulating

This room cooler consists of an outer steel cabinet, finished in natural walnut wood grain, containing a finned tube cooling unit, heat interchanger and thermostatic expansion valve (for direct expansion only), motor-driven fan and condensate drip pan. It may be directly connected with direct expansion of refrigerant from a remote condensing unit, either singly or in multiple with other Room Coolers or Room Air Conditioners or it may use circulating cold water as the refrigerating medium. Control may be manual or thermostatic. Moisture removed from the air is carried away through a drain. The cabinet is removable for installation of refrigerant lines and wiring.

Cabinet

Sheet metal; walnut wood grained finish. Cabinet may be slid off horizontally from front without disturbing unit.

Fan

General Electric 10-in. aphonic pressure type propeller fan.

Fan Motor

General Electric 1/100 hp. resistance split-phase type for a-c. service and constant-speed compound-wound for d-c. service, mounted in rubber to insure a minimum of vibration and quietness of operation.

Cooling Surface

Finned copper tubing dipped in solder. Two cooling surfaces connected in parallel.

Expansion Valve

Automatic thermostatic expansion type with pressure limiting device for overload protection provided on units designed for Freon.

Heat Interchanger

Single-heat interchanger furnished for Freon units, consisting of a double copper tube coil. Cold refrigerant vapor from the cooling coil passes through the inner tube to the suction lines and is warmed by the warm liquid refrigerant which flows in the outer tube in the space between the two walls to the expansion valve. The effect of this heat interchanger is to increase the capacity of the refrigerating system and to prevent sweating of the suction lines.

Electric Connections

A special manual flush tumbler switch assembly suitable for operating one or two room coolers in parallel is available. This switch may be recessed in the wall at any desirable location and connection made to a terminal box built in the unit. It has two switches, one for starting and stopping the fan motor, the other for starting and stopping the condensing unit. The latter is interlocked so that the compressor can not run unless the fan runs. When it is desired to operate more than two coolers in parallel under manual control a larger switch may be ordered.

Thermostatic control may be provided as optional equipment. Room is available within the cabinet for adding a solenoid valve when required.

Dimensions

Length, inches 29½
Depth, inches 16⅞
Height, inches 24⅛

Weight

	Net Lbs.	Shipping Lbs.
Unit		130
Cabinet		50
Total	150	180

SUMMARY OF CHARACTERISTICS

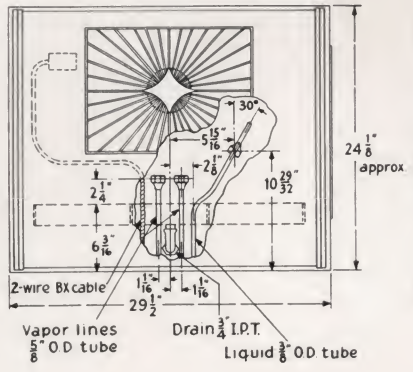
Cooling Medium	Room Cooler Type	Room Cooler Model No.	Fan Motor Volts	Phase	Cycles	Rpm.	Hp.	Air Circulation Cfm.	Piping Connections: Cooling Medium Supply No.	Size	Cooling Medium Outlet No.	Size	Condensate Drain No.	Size	Cooling Rating* Btu. per Hr.
Freon	AG-4	21AG4A1	110	1	60	800	1/100	475	1	3/8 SAE	2	5/8 SAE	1	3/4 IPS	14800
		21AG4A2	115	–	d-c.	800	1/100	475	1	3/8 SAE	2	5/8 SAE	1	3/4 IPS	14800
		21AG4A3	110	1	50	900	1/100	535	1	3/8 SAE	2	5/8 SAE	1	3/4 IPS	15800
Water	AG-4	21AG4B1	110	1	60	800	1/100	475	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	15900
		21AG4B2	115	–	d-c.	800	1/100	475	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	15900
		21AG4B3	110	1	50	900	1/100	535	1	3/4 IPS	1	3/4 IPS	1	3/4 IPS	17000

* Conditions of Cooling Rating	Freon	Water
Entering air dry bulb temperature, deg. F.	80	80
Entering air wet bulb temperature, deg. F.	67	67
Average refrigerant temperature, deg. F.	32	

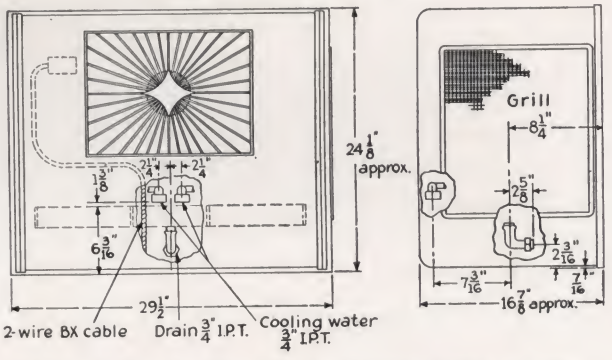
* Conditions of Cooling Rating	Freon	Water
Inlet water temperature, deg. F.		40
Outlet water temperature with 475 cfm., deg. F.		46.3
Water circulation, gals. per min., Type AG-4		5
Water pressure drop, lb. per sq. in.		9

*NOTE: For conditions other than these standard rating conditions the actual operating capacity may be more or less than that shown above.

Freon Cooling Medium



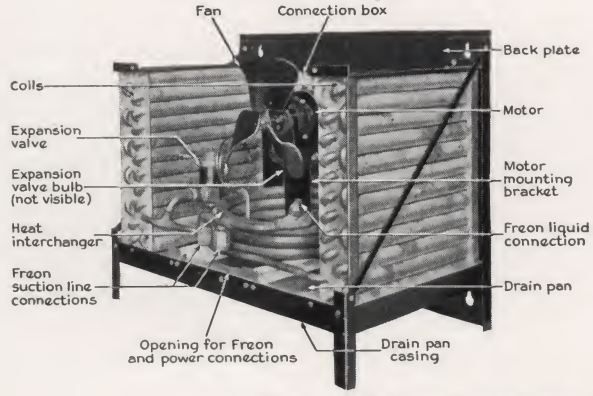
Water Cooling Medium



Note: Cooling water pipes, and electrical connection pass through a 1"X6" notch in front edge of drain pan.

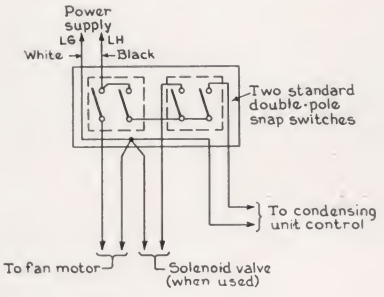
Connections and Dimensions

Freon Cooling Medium



Water Cooling Medium

Type AG-4 Room Cooler with Cabinet and Air Baffle Removed

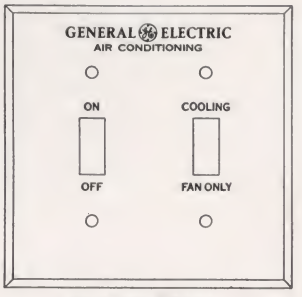


Electrical connections may be made with two standard double-pole tumbler switches in sectional switch box as shown.

For one or two Type AG-4 room coolers use two 10-ampere double-pole switches G-E Cat. No. 2845.

For three, four or five Type AG-4 room coolers use two 20-ampere double-pole switches G-E Cat. No. 2847

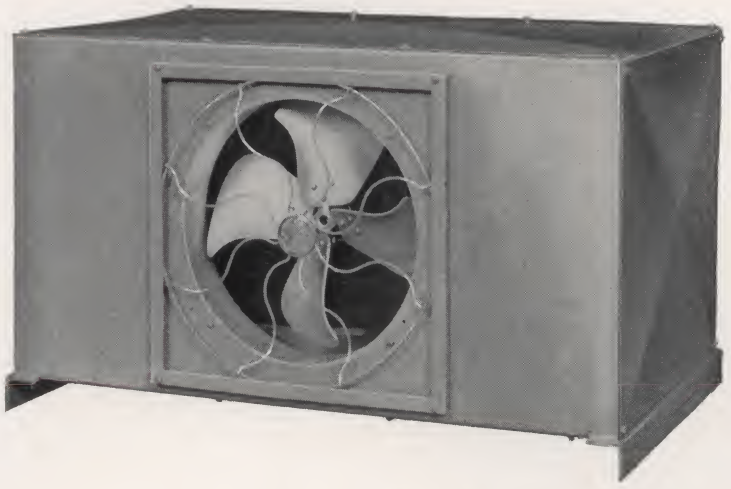
Switch plate N.P. 60611 as shown must be ordered separately.



Switch Plate

Specifications

GENERAL ELECTRIC
STORE COOLER
TYPE AG-12



General

The General Electric Store Cooler, Type AG-12 is designed primarily for comfort cooling applications where the following air conditioning functions are required:

1. Cooling
2. Dehumidifying
3. Circulating

This room cooler consists of an outer steel case, finished in gray, containing two finned tube cooling units, thermostatic expansion valve (for direct expansion only), motor-driven fan and condensate drip pan. It is arranged for ceiling mounting. It may be directly connected with direct expansion of refrigerant from a remote condensing unit, either singly or in multiple with other Room Coolers or Room Air Conditioners or it may use circulating cold water as the refrigerating medium. Control may be manual or thermostatic. Moisture removed from the air is carried away through a drain.

Two designs of fans and fan motors are provided to permit ductless or duct distribution of air. Heating coils or filters may be added provided the pressure limitation of the fan is not exceeded.

Cabinet

Cabinet is not removable but has removable sheet metal ends, top, and bottom panels finished in dark gray. The right-end panel, when removed, permits ready access to the unit for making all electrical and refrigerant connections. Suitable holes are left in the back of the unit for connections to pass out of the unit.

The guard over the fan has a removable square frame to which a canvas duct may be attached for connecting the fan discharge to an air distributing system. Holes are provided in the frame at the rear for the same purpose.

The unit may be hung from the ceiling by straps or angles which attach to the base of the unit.

Fan

G-E 14-in. aphonic pressure type propeller fan. Two designs are provided: one with a pitch of 44 deg. for free delivery of air, and one with a pitch of 35 deg. for duct delivery of air. The latter may be used also for free delivery with a resulting air flow of 1300 cfm. but the noise will be higher than the design with the 44-deg. pitch fan. The fan with 35-deg. pitch is suitable for duct delivery only when the total pressure drop across filters, heating coils, and in the ducts does not exceed 0.06 inches of water.

Fan Motor

All motors for various power supply and fan requirements are mechanically interchangeable. The alternating-current motors are rubber mounted to prevent noise from being transmitted to the unit.

Alternating-current motors are of the resistance split-phase type except for the 110-volt, 50-cycle, 1-phase unit for duct delivery which has a capacitor-type motor.

Direct-current motors are of the constant-speed compound-wound type.

Cooling Surfaces

Two of the unit type cooling coils with finned copper tubing dipped in solder are used.

The bulb of the thermostatic expansion valve for Freon units is located four rows back from the outlet so that a portion of the cooling surface is used to superheat the refrigerant leaving in order to prevent sweating of the suction lines.

Expansion Valves

Two automatic thermostatic expansion valves, one for each cooling coil, with pressure limiting device for overhead protection provided on units designed for Freon.

Electric Connections

A special manual flush tumbler switch assembly is available. This switch may be recessed in the wall at any desirable location and connection made to a terminal box built in the unit. It has two switches, one for starting and stopping the fan motor, the other for starting and stopping the condensing unit. The latter is interlocked so the compressor can not run unless the fan runs. When it is desired to operate two coolers in parallel under manual control a larger switch assembly may be ordered.

Thermostatic control may be provided as optional equipment. Room is available within the cabinet for adding a solenoid valve when required.

Dimensions

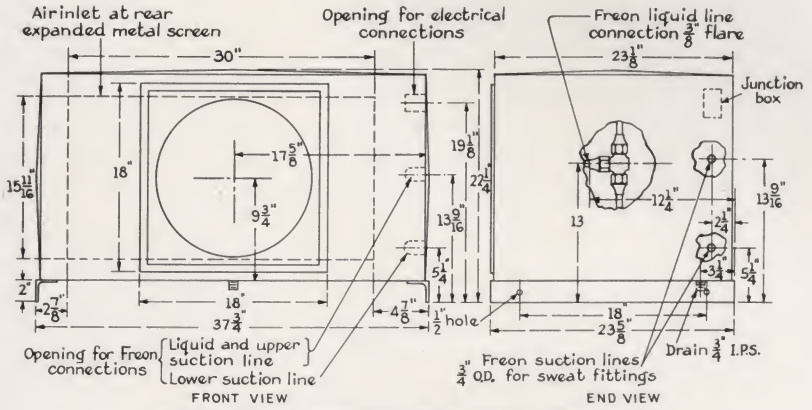
Length, inches.....38
Depth, inches.....24
Height, inches.....22

Weight

Net weight, lbs.....210
Shipping weight, lbs....250

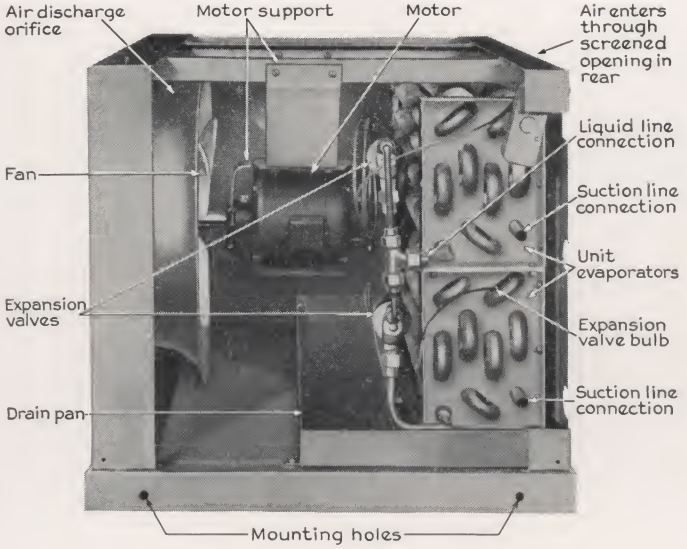
SUMMARY OF CHARACTERISTICS

Cooling Medium	Free or Duct Delivery	Store Cooler Model No.	Fan Motor Volts	Phase	Cycles	Rpm.	Hp.	Watts	Static Press. Avail. for Ducts In. of Water	Air Circulation Cfm.	Piping Connections: Cooling Med. Supply No.	Cooling Med. Supply Size	Cooling Med. Outlets No.	Cooling Med. Outlets Size	Condensate Drain No.	Condensate Drain Size
Freon	Free	21AG12A1	110	1	60	860	1/20	100	.00	1200	1	3/8 SAE	2	3/4 OD	1	3/4 IPS
		21AG12A3	115	—	d-c.	860	1/20	88	.00	1200	1	3/8 SAE	2	3/4 OD	1	3/4 IPS
		21AG12A9	110	1	50	930	1/15	102	.00	1300	1	3/8 SAE	2	3/4 OD	1	3/4 IPS
	Duct	21AG12A5	110	1	60	1140	1/10	127	.06	1210	1	3/8 SAE	2	3/4 OD	1	3/4 IPS
		21AG12A7	115	—	d-c.	1140	1/10	136	.06	1210	1	3/8 SAE	2	3/4 OD	1	3/4 IPS
		21AG12A10	110	1	50	1140	1/10	190	.06	1210	1	3/8 SAE	2	3/4 OD	1	3/4 IPS
Water	Free	21AG12B1	110	1	60	860	1/20	100	.00	1200	2	3/4 OD	2	3/4 OD	1	3/4 IPS
		21AG12B3	115	—	d-c.	860	1/20	88	.00	1200	2	3/4 OD	2	3/4 OD	1	3/4 IPS
		21AG12B9	110	1	50	930	1/15	102	.00	1300	2	3/4 OD	2	3/4 OD	1	3/4 IPS
	Duct	21AG12B5	110	1	60	1140	1/10	127	.06	1210	2	3/4 OD	2	3/4 OD	1	3/4 IPS
		21AG12B7	115	—	d-c.	1140	1/10	136	.06	1210	2	3/4 OD	2	3/4 OD	1	3/4 IPS
		21AG12B10	110	1	50	1140	1/10	190	.06	1210	2	3/4 OD	2	3/4 OD	1	3/4 IPS

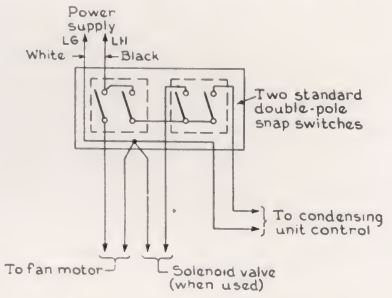


Note: Liquid line connection and expansion valves are omitted on store cooler for use with water. Cooling water connections are same type and size and in same position as suction line connections shown.

Connections and Dimensions



Type AG-12 with Cabinet Removed



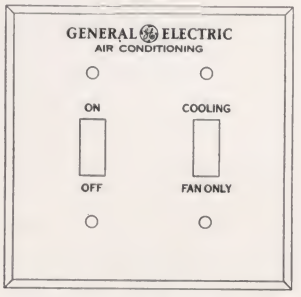
Electrical Connections

Electrical connections may be made with two standard double-pole tumbler switches in sectional switch box as shown.

For one AG-12 store cooler use two 10-ampere double-pole switches G-E Cat. No. 2845.

For two AG-12 store coolers use two 20-ampere double-pole switches G-E Cat. No. 2847.

Switch plate N.P. 60611 as shown must be ordered separately.



Switch Plate

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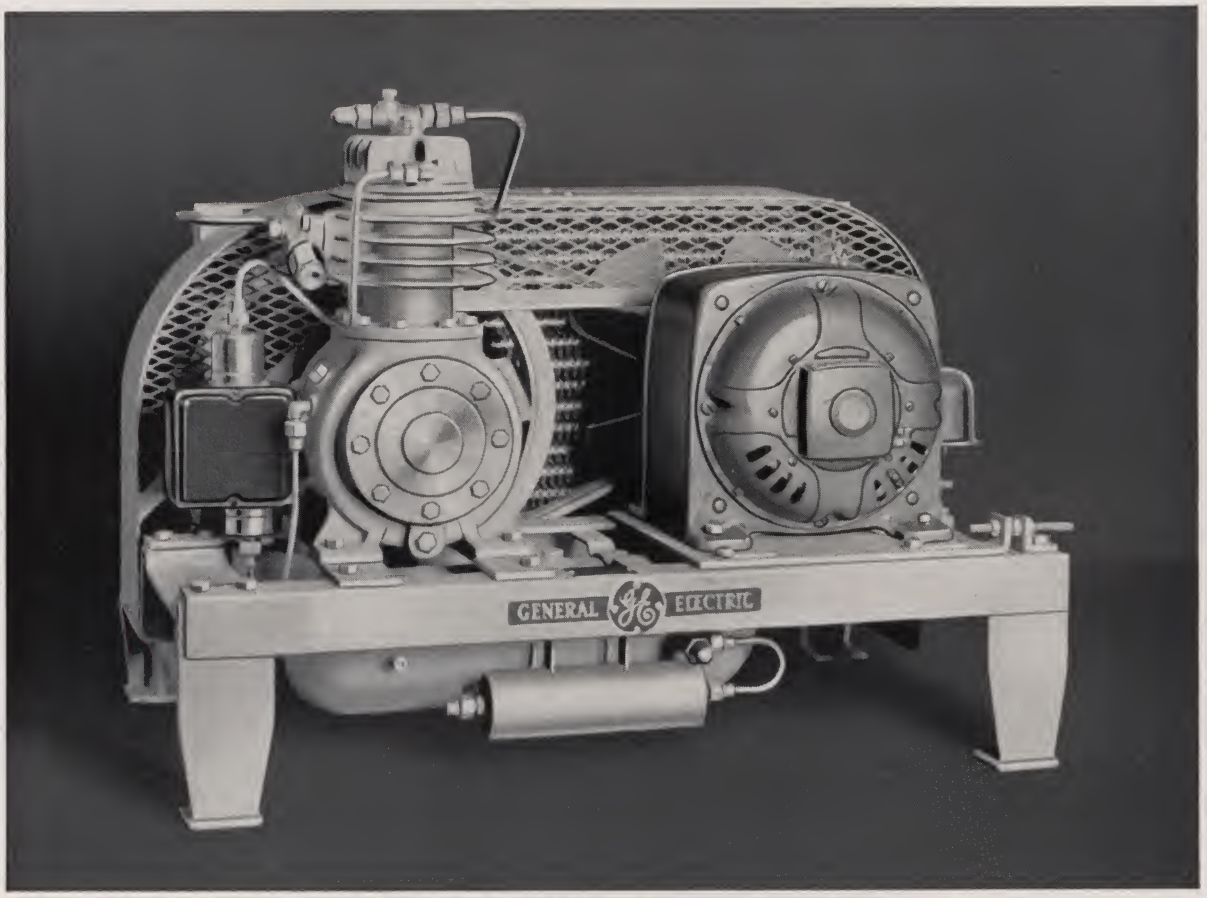
Specifications

GENERAL ELECTRIC

CONDENSING UNIT

TYPE CM-5A



General

The General Electric condensing unit, Type CM-5A, carefully designed to give quiet operation, consists of an external motor, belt driven compressor, air cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction pressure control with high pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload. thermal protective device and an across-the-line starting switch. The unit is also provided with an adequate charge of Freon refrigerant and lubricating oil. Finish is an attractive gray.

Quiet and standard motors are available on order. Thermostatic control of this unit in a complete cooling system is available as optional equipment.

Installations should not be made in unventilated spaces having a volume less than 1000 cubic feet.

To avoid excessive pressure drop in refrigerant lines it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded if larger than standard tubing is used to reduce the pressure drop. To insure proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling units.

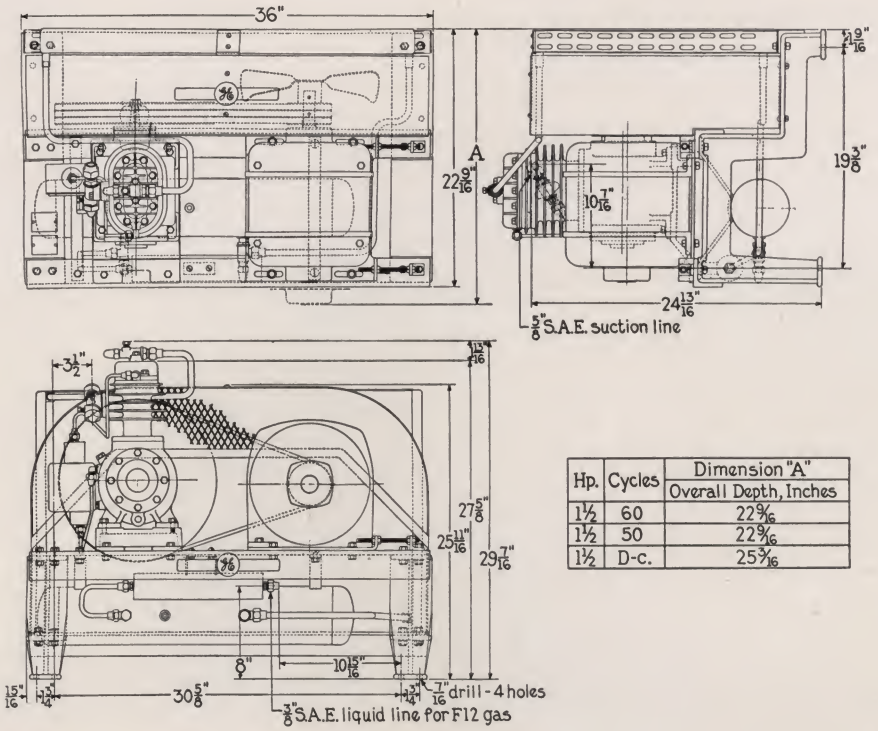
***Rating at Standard Conditions**

Cooling.....13,300 Btu. per hr.
Power Consumption.....1.85 kw.

***Note:**

Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling air temperature.....90 deg. F.
Evaporator refrigerant temperature..40 deg. F.



Hp.	Cycles	Dimension "A" Overall Depth, Inches
1½	60	22 9/16
1½	50	22 9/16
1½	D-c.	25 3/16

Connections and Dimensions

Compressor

Cylinders.....2
Bore.....2 in.
Stroke.....2½ in.
Speed.....500 rpm.
Gaskets.....Lead
Suction valves.....2 Disc Type (In valve plate)
Discharge valves.....2 Reed Type (In valve plate)
Valve plate.....Meehanite (air cooled)
Suction service valves....One ⅝-in. S.A.E. flare
Discharge service valves..One ½-in. S.A.E. flare
Lubrication.....Splash system
Oil charge.....4 pints

Motor

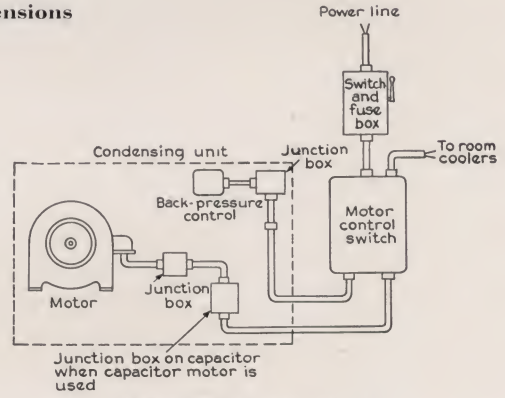
Size.....1½ hp.
D-c.....Compound wound, type B
A-c., single-phase
Standard.....Repulsion induction, type SCR
Optional on order...Capacitor, type KC
A-c., polyphase.....Squirrel cage, type KB

Control

D-c. motor starter
Standard.....Across-the-line magnetic type
Optional on order...Current limiting magnetic type
A-c. motor starter
Standard.....Across-the-line magnetic type
Optional on order...Current limiting magnetic type
Overload protection.....Thermal overload relay in starter
Head pressure safety cutout.....Actuated by condenser pressure
Back pressure control....Actuated by suction pressure

Refrigerant Charge

Refrigerant.....Freon
Normal charge.....7½ lb.
Min. for proper operation.2 lb.
Max. for proper operation.12 lb.



Electrical Connections

Liquid Receiver

Type.....Horizontal welded steel
Capacity.....12 lb.

Condenser

Type.....Finned copper coil dipped in solder
Cooling medium.....Air

Drive

Three "V" belts

Piping Connections

Refrigerant suction line..One ⅝-in. S.A.E. flare
Refrigerant liquid line....One ⅜-in. S.A.E. flare

MODEL NUMBERS

CM-5A Condensing Unit	MOTOR		POWER SUPPLY*			Approx. Net Weight, Lb.
	Type	Hp.	Volts	Cycles	Phase	
19CM5A201	SCR	1½	110/220	60	1	330
19CM5A202	B	1½	230	d-c.	—	350

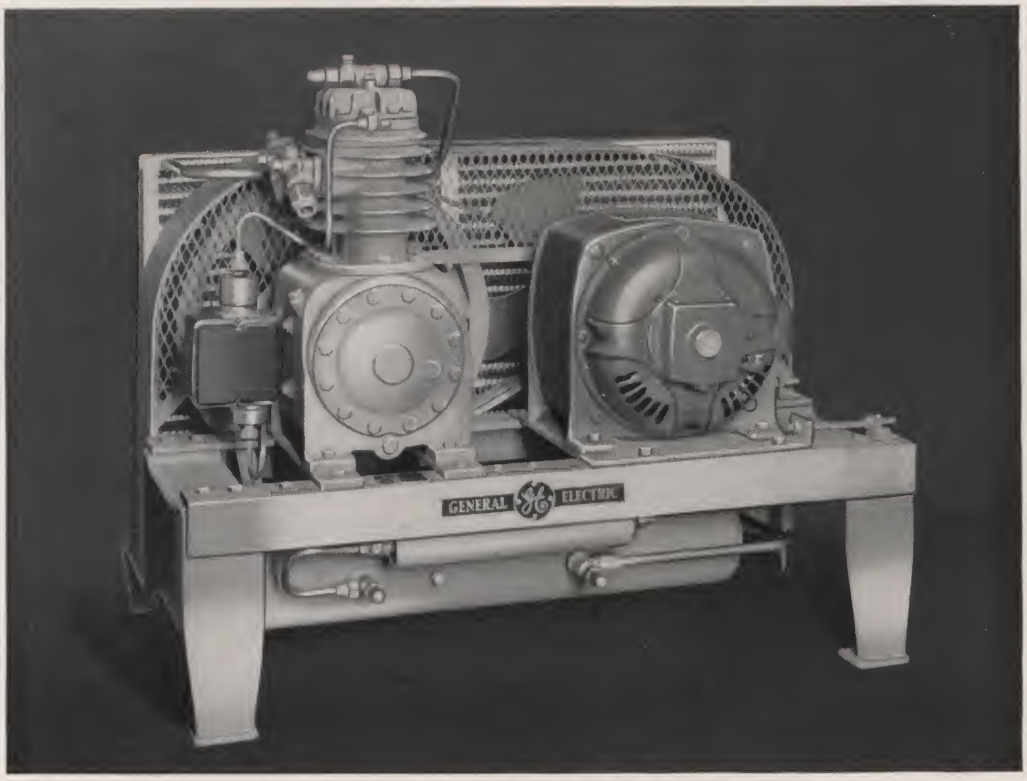
* Other power supplies available on special order.

Specifications

GENERAL ELECTRIC

CONDENSING UNIT

TYPE CM-6A



General

The General Electric condensing unit, Type CM-6A, carefully designed to give quiet operation, consists of an external motor, belt-driven compressor, air-cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction-pressure control with high-pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload thermal protective device and an across-the-line starting switch. The unit is charged with Freon refrigerant and lubricating oil. Finish is an attractive gray.

Quiet and standard motors are available on order. Thermostatic control of this unit in a complete cooling system is available on order.

Installations should not be made in unventilated spaces having a volume less than 1800 cubic feet.

To avoid excessive pressure drop in refrigerant lines it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded, if larger than standard tubing is used to reduce the pressure drop. To insure proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling units.

Motor

Size	2 hp.
D-c.	Compound wound, type B
A-c., single-phase	
Standard	Repulsion induction, type SCR
On special order	Capacitor, type KC
A-c., polyphase	Squirrel cage, type KB

Control

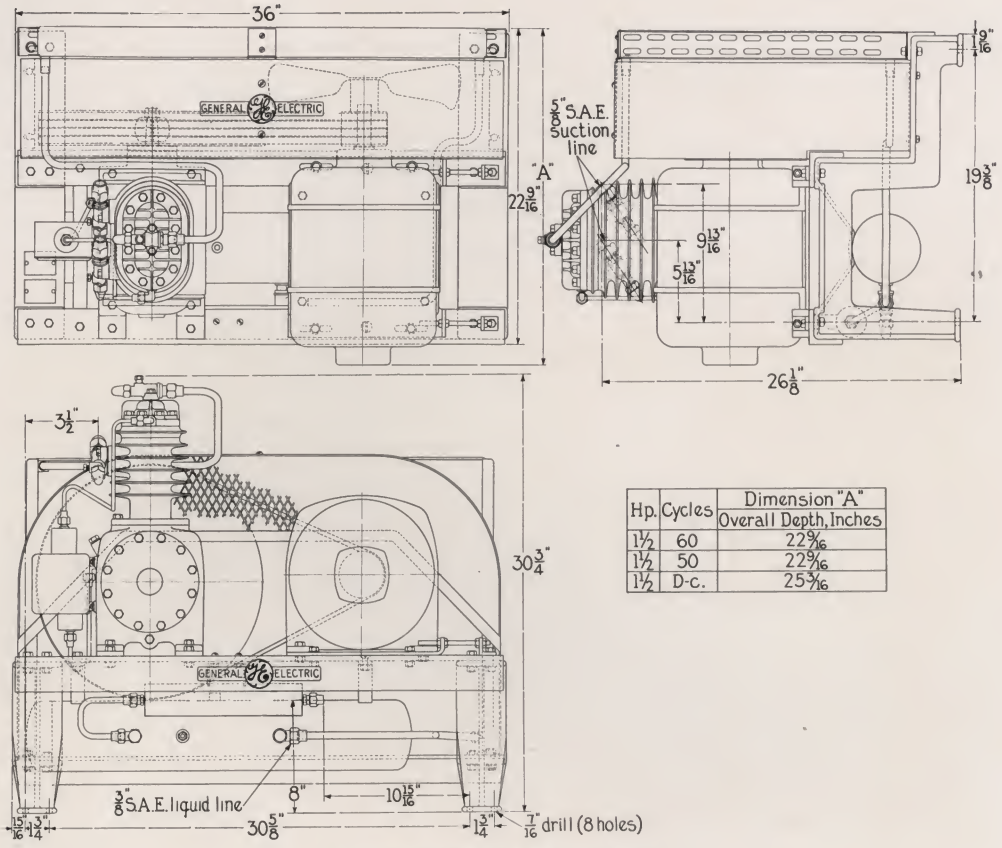
D-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
A-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
Overload protection	Thermal overload relay in starter
Head pressure safety cutout	Actuated by condenser pressure
Back pressure control	Actuated by suction pressure

*** Rating at Standard Conditions**

Cooling	19,500 Btu. per hr.
Power consumption	2.49 kw.

*** Note:** Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling air temperature	90 deg. F.
Evaporator refrigerant temperature	40 deg. F.



Hp.	Cycles	Dimension "A" Overall Depth, Inches
1½	60	22 9/16
1½	50	22 9/16
1½	D-c.	25 3/16

Connections and Dimensions

Compressor

Cylinders.....2
Bore.....2½ in.
Stroke.....3½ in.
Speed.....275 rpm.

Gaskets.....Lead
Suction valves.....2 Disc Type (In valve plate)
Discharge valves.....2 Reed Type (In valve plate)
Valve plate.....Meehanite (air cooled)
Suction service valves....Two ⅝ in. S.A.E. flare
Discharge service valve...One ½ in. S.A.E. flare
Lubrication.....Splash system
Oil charge.....6 pints

Refrigerant Charge

Refrigerant.....Freon
Normal charge.....14 lb.
Min. for proper operation.3½ lb.
Max. for proper operation 21 lb.

Liquid Receiver

Type.....Horizontal welded steel
Capacity.....21 lb.

Condenser

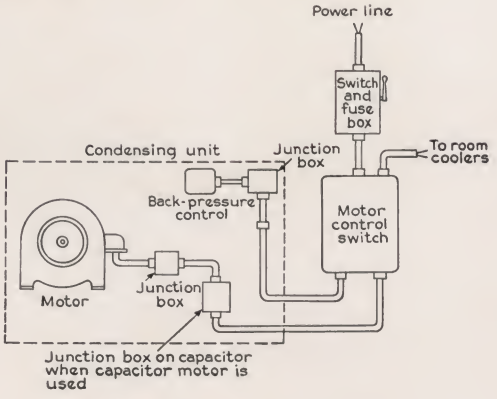
Type.....Finned copper coil dipped in solder
Cooling medium.....Air

Drive

Four "V" belts

Piping Connections

Refrigerant suction lines..Two ⅝ in. S.A.E. flare
Refrigerant liquid line....One ⅜ in. S.A.E. flare



Electrical Connections

MODEL NUMBERS

CM-6A Condensing Unit	MOTOR			POWER SUPPLY*			APPROX. NET WEIGHT
	Type	Hp.	Rpm.	Volts	Cycles	Phase	Lb.
19CM6A201	SCR	2	1800	110/220	60	1	425
19CM6A202	KB	2	1800	220/440	60	3	455
19CM6A203	B	2	1750	230	d-c.	..	460

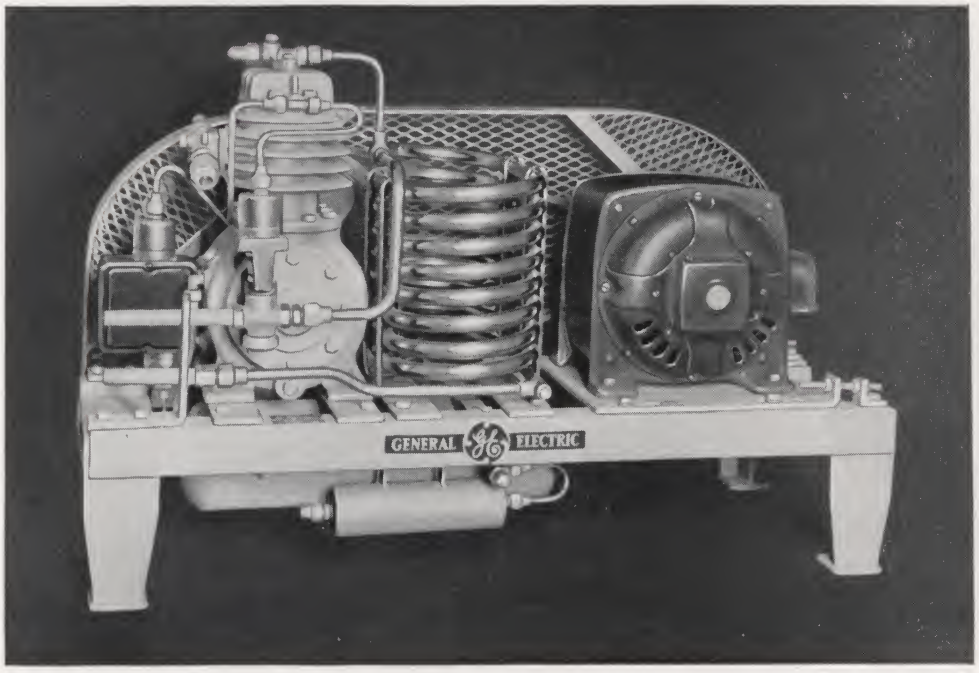
* Other power supplies available on special order.

Specifications

GENERAL ELECTRIC

CONDENSING UNIT

TYPE CM-5W



General

The General Electric condensing unit, Type CM-5W, carefully designed to give quiet operation, consists of an external motor, belt-driven compressor, water-cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction-pressure control with high-pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload thermal protective device and an across-the-line starting switch. The unit is charged with Freon refrigerant and lubricating oil. Finish is an attractive gray.

Quiet and standard motors are available on order. Thermostatic control of this unit in a complete cooling system is available on order.

The Type CM-5W may be enclosed in a housing when concealed installations are necessary. Whenever this unit is located in a housing or unventilated space having a volume less than 100 cubic feet a water-cooled coil is available to carry away heat due to motor losses.

To avoid excessive pressure drop in refrigerant lines it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded if larger than standard tubing is used to reduce the pressure drop. To insure proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling units.

Motor

D-c	Compound wound, type B
A-c., single-phase	
Standard	Repulsion induction, type SCR
On special order	Capacitor, type KC
A-c., polyphase	Squirrel cage, type KB

Control

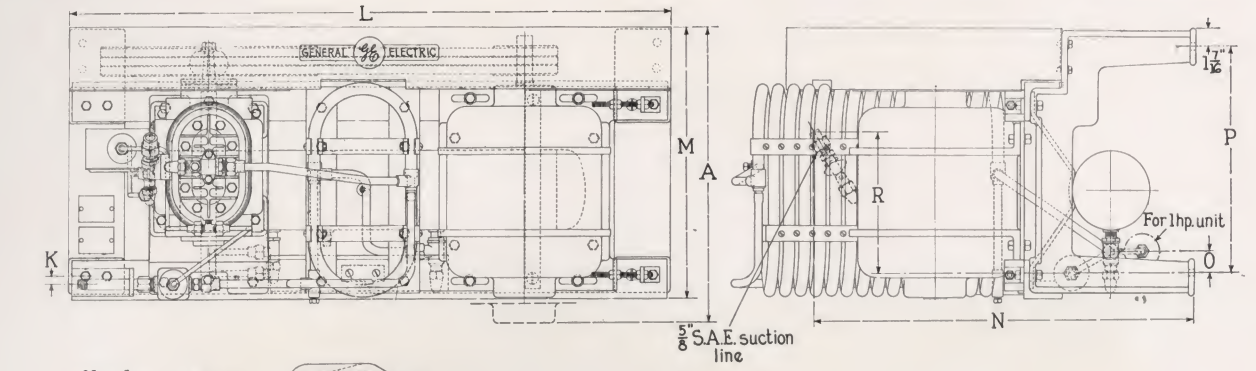
D-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
A-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
Overload protection	Thermal overload relay in starter
Head pressure safety cutout	Actuated by condenser pressure
Back pressure control	Actuated by suction pressure

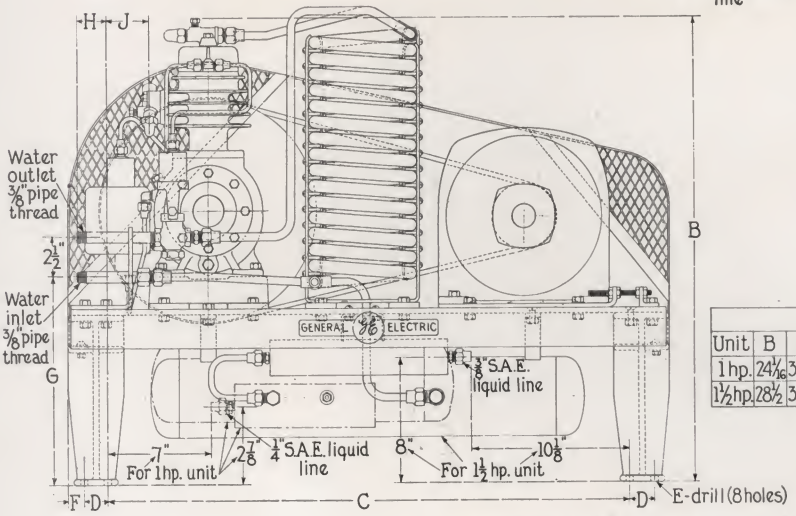
***Rating at Standard Conditions**

Cooling, 1 hp	10,500 Btu. per hr.
1½ hp	14,900 Btu. per hr.
Power consumption, 1 hp	1.34 kw.
1½ hp	1 88 kw.
Water consumption, 1 hp	60 gal. per hr.
1½ hr	90 gal. per hr.

***Note:** Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling water temperature	80 deg. F.
Evaporator refrigerant temperature	40 deg. F.
Ambient temperature	90 deg. F.
Head pressure	130 lb. per sq. in. gauge





Hp.	Cycles	Dimension "A" Overall Depth, Inches
1	60	17¼
1	50	17¼
1	D-c.	18¾
1½	60	17¼
1½	50	17¼
1½	D-c.	20⅝

Dimensions, Inches																
Unit	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R
1 hp.	24 1/16	31⅜	1⅜	⅜	1 3/16	9½	1 3/16	2 1/16	5/16	35¾	16 5/16	19¾	1¼	13⅜	7⅞
1½ hp.	28½	33⅝	1¾	7/16	1 5/16	13	2 1/16	2⅝	⅝	39	17¼	24 13/16		14 13/16	10 7/16

Connections and Dimensions

Compressor

Cylinders	2
Bore	2 in.
Stroke	2½ in.
Speed, 1 hp	375 rpm.
1½ hp	500 rpm.
Gaskets	Lead
Suction valves	2 Disc Type (In valve plate)
Discharge valves	2 Reed Type (In valve plate)
Valve plate	Meehanite (air cooled)
Suction service valves	One ⅝-in. S.A.E. flare
Discharge service valves	
1 hp	One ⅜-in. S.A.E. flare
1½ hp	One ½-in. S.A.E. flare
Lubrication	Splash system
Oil charge	4 pints

Refrigerant Charge

Refrigerant	Freon
Normal charge	7½ lb.
Min. for proper operation	2 lb.
Max. for proper operation	12 lb.

Liquid Receiver

Type	Horizontal welded steel
Capacity	12 lb.

Condenser

Type	Double copper coil
Cooling medium	Water

Water Regulating Valve

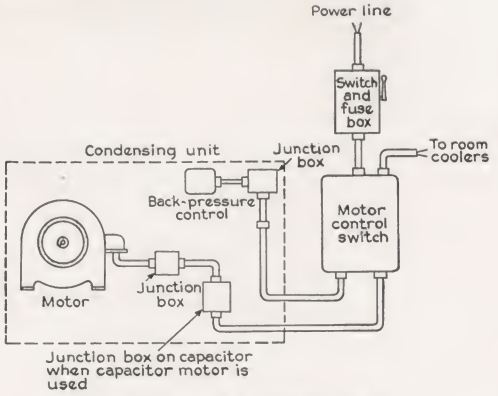
Type	Actuated by head pressure
Size	⅜ in.

Drive

Three "V" belts

Piping Connections

Cooling water inlet	One ⅜-in. outside pipe thread
Cooling water outlet	One ⅜-in. outside pipe thread



Electrical Connections

Refrigerant suction line	One ⅝-in. S.A.E. flare
Refrigerant liquid line	
1½ hp	One ⅜-in. S.A.E. flare
1 hp	One ¼-in. S.A.E. flare

MODEL NUMBERS

CM-5W Condensing Unit	MOTOR		POWER SUPPLY*			APPROX. NET WEIGHT
	Type	Hp.	Volts	Cycle	Phase	Lb.
19CM5W201	SCR	1	110/220	60	1	340
19CM5W202	KC	1	220	60	1	340
19CM5W203	B	1	230	d-c.	—	365
19CM5W204	SCR	1½	110/220	60	1	350
19CM5W205	KC	1½	220	60	1	380
19CM5W206	B	1½	230	d-c.	—	385

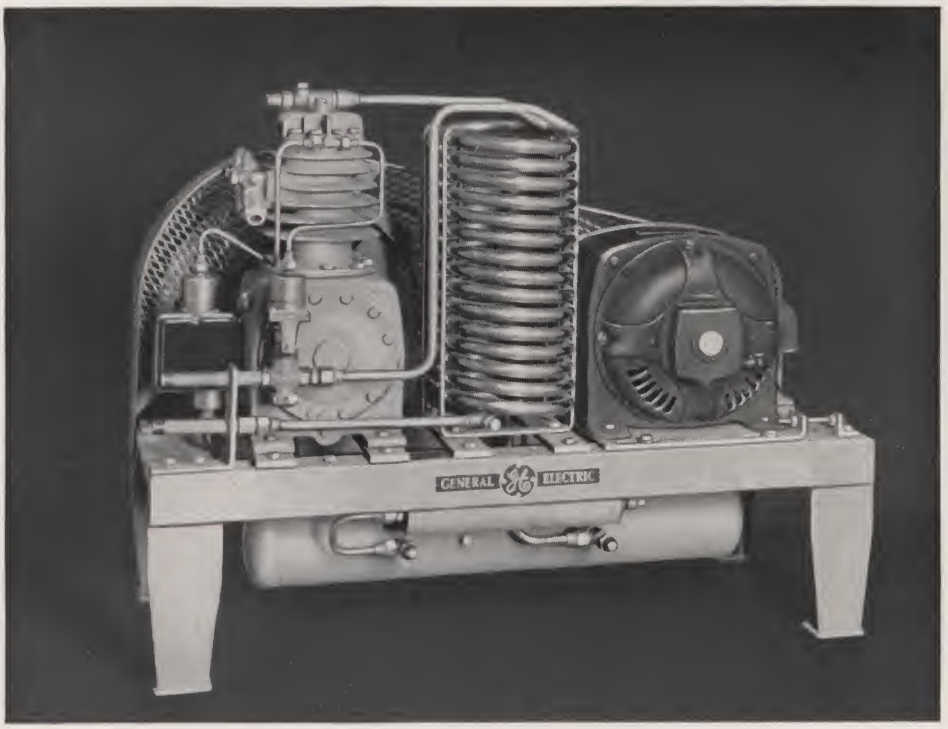
* Other power supplies available on special order.

Specifications

GENERAL ELECTRIC

CONDENSING UNIT

TYPE CM-6W



General

The General Electric condensing unit, Type CM-6W, carefully designed to give quiet operation, consists of an external motor, belt-driven compressor, water-cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction-pressure control with high-pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload thermal protective device and an across-the-line starting switch. The unit is charged with Freon refrigerant and lubricating oil. Finish is an attractive gray.

Quiet and standard motors are available on order. Thermostatic control of this unit in a complete cooling system is available on order.

The Type CM-6W may be enclosed in a housing when concealed installations are necessary. Whenever this unit is located in a housing or unventilated space having a volume less than 150 cubic feet a water cooling coil is available to carry away heat due to motor losses.

To avoid excessive pressure drop in refrigerant lines it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded if larger than standard tubing is used to reduce the pressure drop. To insure proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling units.

Motor

Size	2 hp.
D-c.	Compound wound, type B
A-c., single-phase	
Standard	Repulsion induction, type SCR
Quiet	Capacitor, type KC
A-c., polyphase	
Standard	Squirrel cage, type K
On special order	Squirrel cage, type KB

Control

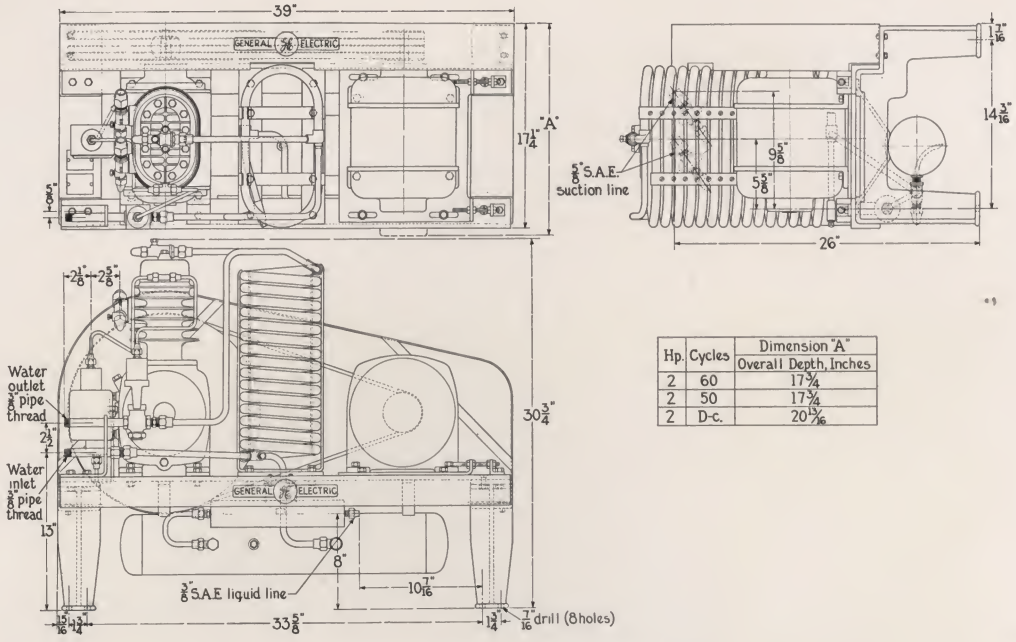
D-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
A-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
Overload protection	Thermal overload relay in starter
Head pressure safety cutout	Actuated by condenser
Back pressure control	Actuated by suction pressure

* Rating at Standard Conditions

Cooling	21,300 Btu. per hr.
Power consumption	2.54 kw.
Water consumption	140 gal. per hr.

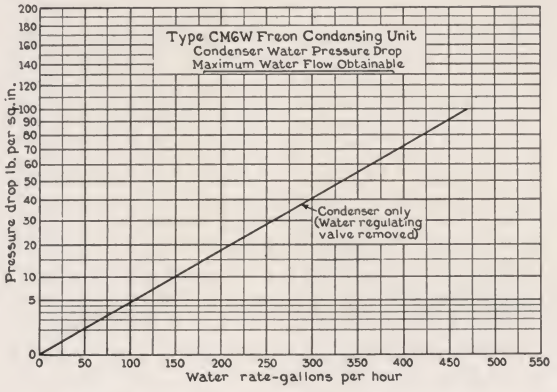
* **Note:** Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling water temperature	80 deg. F.
Evaporator refrigerant temperature	40 deg. F.
Ambient temperature	90 deg. F.
Head pressure	140 lb. per sq. in. gauge

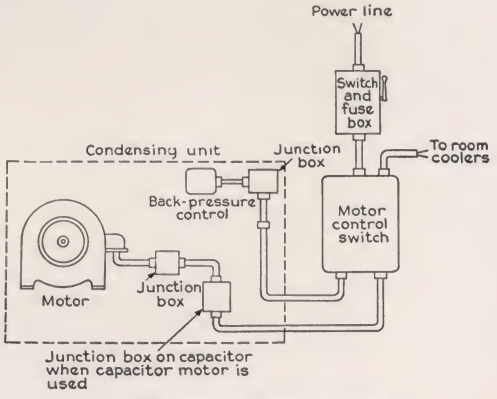


Hp.	Cycles	Dimension "A" Overall Depth, Inches
2	60	17¾
2	50	17¾
2	D-c.	20 1/16

Connections and Dimensions



Water Pressure Drop Through Condenser



Electrical Connections

Compressor

Cylinders	2
Bore	2½ in.
Stroke	3½ in.
Speed	325 rpm.
Gaskets	Lead
Suction valves	2 Disc Type (In valve plate)
Discharge valves	2 Reed Type (In valve plate)
Valve plate	Meehanite (air cooled)
Suction service valves	Two 5/8-in. S.A.E. flare
Discharge service valves	One ½-in. S.A.E. flare
Lubrication	Splash system
Oil charge	6 pints

Refrigerant Charge

Refrigerant	Freon
Normal charge	14 lb.
Min. for proper operation	3½ lb.
Max. for proper operation	21 lb.

Liquid Receiver

Type	Horizontal welded steel
Capacity	21 lb.

Condenser

Type	Double copper coil
Cooling medium	Water

Water Regulating Valve

Type	Actuated by head pressure
Size	3/8 in.

Drive

Four "V" belts

Piping Connections

Cooling water inlet	One 3/8-in. outside pipe thread
Cooling water outlet	One 3/8-in. outside pipe thread
Refrigerant suction lines	Two 5/8-in. S.A.E. flare
Refrigerant liquid line	One 3/8-in. S.A.E. flare

MODEL NUMBERS

CM-6W Condensing Unit	MOTOR			POWER SUPPLY*			APPROX. NET WEIGHT
	Type	Hp.	Rpm.	Volts	Cycles	Phase	Lb.
19CM6W201	SCR	2	1800	110/220	60	1	400
19CM6W202	KC	2	1800	220	60	1	430
19CM6W203	KB	2	1800	220/440	60	3	385
19CM6W204	B	2	1750	230	d-c.	..	435

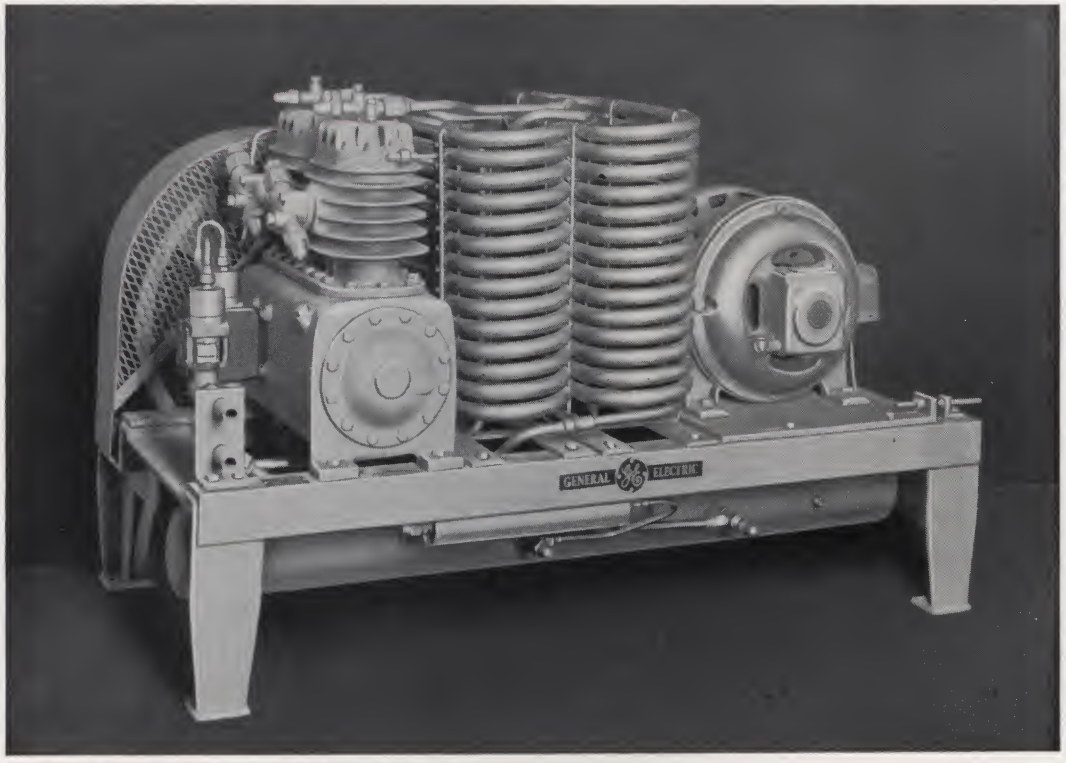
* Other power supplies available on special order.

Specifications

GENERAL ELECTRIC

CONDENSING UNITS

TYPE CM-8W, 3 HP.



General

The General Electric condensing unit, Type CM-8W, carefully designed to give quiet operation, consists of an external motor, belt driven compressor, water cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction pressure control with high pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload thermal protective device and an across-the-line starting switch. The unit is also provided with an adequate charge of Freon refrigerant and lubricating oil. Finish is an attractive gray.

Quiet and standard motors are available on order. Thermostatic control of this unit in a complete cooling system is available as optional equipment.

The Type CM-8W may be enclosed in a housing when concealed installations are necessary. Whenever this unit is located in a housing or unventilated space having a volume less than 200 cubic feet a water cooling coil is available to carry away heat due to motor losses.

To avoid excessive pressure drop in refrigerant lines it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded if larger than standard tubing is used to reduce the pressure drop. To insure proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling units.

Motor

Size	3 hp.
D-c.	Compound wound, Type B
A-c., single-phase	
Standard	Repulsion induction, Type SCR
Optional on order	Capacitor, Type KC
A-c., polyphase	Squirrel cage, Type KB

Control

D-c. motor starter	
Standard	Across-the-line magnetic type
Optional on order	Current limiting magnetic type
A-c. motor starter	
Standard	Across-the-line magnetic type
Optional on order	Current limiting magnetic type
Overload protection	Thermal overload relay in starter
Head pressure safety cut-out	Actuated by condenser pressure
Back pressure control	Actuated by suction pressure

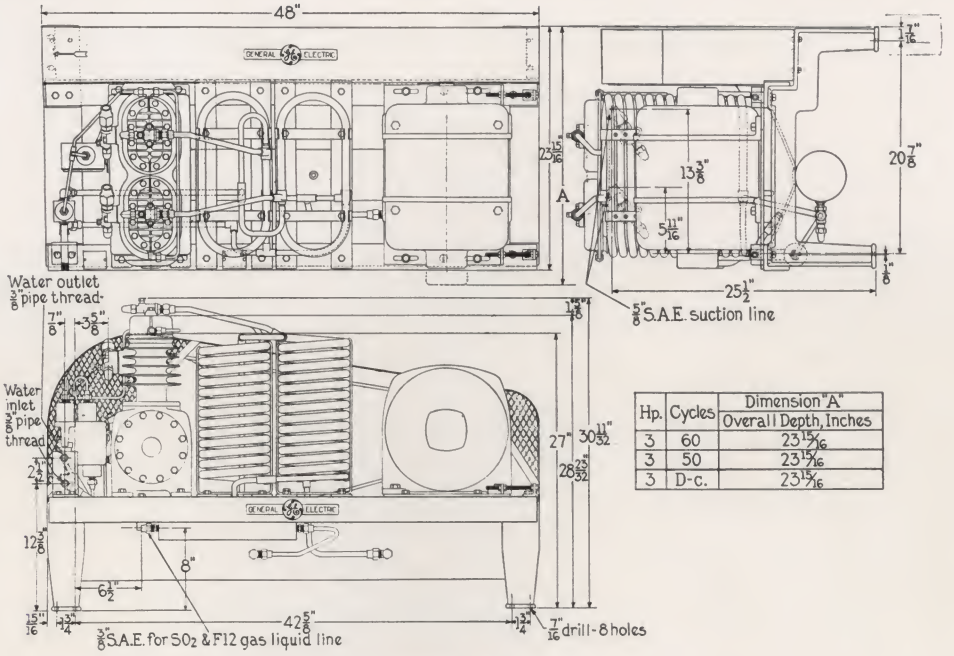
***Rating at Standard Conditions**

Cooling	33,200 Btu. per hr.
Power consumption	3.33 kw.
Water consumption	200 gal. per hr.

***Note:**

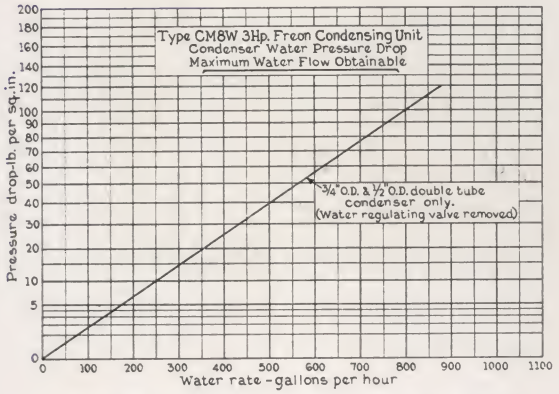
Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling water temperature	70 deg. F.
Evaporator refrigerant temperature	40 deg. F.
Ambient temperature	90 deg. F.
Head pressure	140 lb. per sq. in. gauge

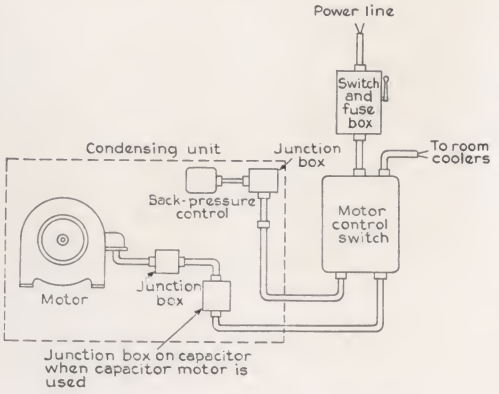


Hp.	Cycles	Dimension "A" Overall Depth, Inches
3	60	23 15/16
3	50	23 15/16
3	D-c.	23 15/16

Connections and Dimensions



Water Pressure Drop Through Condenser



Electrical Connections

Compressor

Cylinders....4
Bore....2½ in.
Stroke....3½ in.
Speed....240 rpm.
Gaskets....Lead
Suction valves....4 Disc Type (In valve plate)
Discharge valves....4 Reed Type (In valve plate)
Valve plate....Meehanite (air cooled)
Suction service valves....Two 5/8-in. S.A.E. flare
Discharge service valves..Two ½-in. S.A.E. flare
Lubrication....Splash system
Oil charge....10 pints

Refrigerant Charge

Refrigerant....Freon
Normal charge....20 lb.
Min. for proper operation..6 lb.
Max. for proper operation..35 lb.

Liquid Receiver

Type....Horizontal welded steel
Capacity....35 lb.

Condenser

Type....Double copper coil
Cooling medium....Water

Water Regulating Valve

Type....Actuated by head pressure
Size....3/8 in.

Drive

Five "V" belts

Piping Connections

Cooling water inlet....One 3/8-in. outside pipe thread
Cooling water outlet....One 3/8-in. outside pipe thread
Refrigerant suction lines..Two 5/8-in. S.A.E. flare
Refrigerant liquid line....One 3/8-in. S.A.E. flare

MODEL NUMBERS

CM-8W Condensing Unit	MOTOR		POWER SUPPLY*			Approx. Net Weight Lb.
	Type	Hp.	Volts	Cycles	Phase	
19CM8W201	SCR	3	110/220	60	1	650
19CM8W202	KC	3	220	60	1	660
19CM8W203	KB	3	220/440	60	3	605
19CM8W204	B	3	230	d-c.	—	700

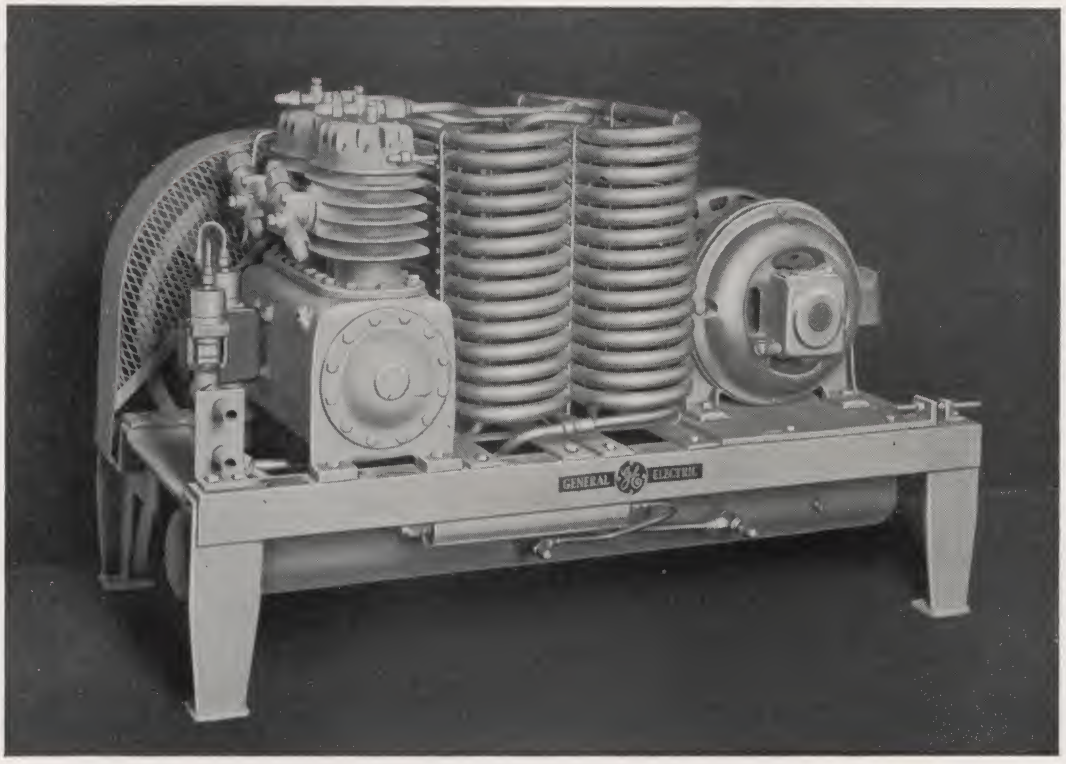
* Other power supplies available on special order.

Specifications

GENERAL ELECTRIC

CONDENSING UNIT

CM-8W 5 HP.



General

The General Electric condensing unit, Type CM-8W, carefully designed to give quiet operation, consists of an external motor, belt-driven compressor, water-cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction-pressure control with high-pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload thermal protective device and a starting switch. The unit is charged with Freon refrigerant and lubricating oil. Finish is an attractive gray.

Quiet and standard motors are available on order. Thermostatic control of this unit in a complete cooling system is available on order.

The Type CM-8W may be enclosed in a housing when concealed installations are necessary. Whenever this unit is located in a housing or unventilated space having a volume less than 200 cubic feet a water-cooled coil is available to carry away heat due to motor losses.

To avoid excessive pressure drop in refrigerant lines, it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded, if larger than standard tubing is used to reduce the pressure drop. To insure proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling units.

Motor

Size	5 hp.
D-c.	Compound wound, type B
A-c., single phase	
Standard	Repulsion induction, type SCR
On special order	Capacitor, type KC
A-c., polyphase	Squirrel cage, type KB

Control

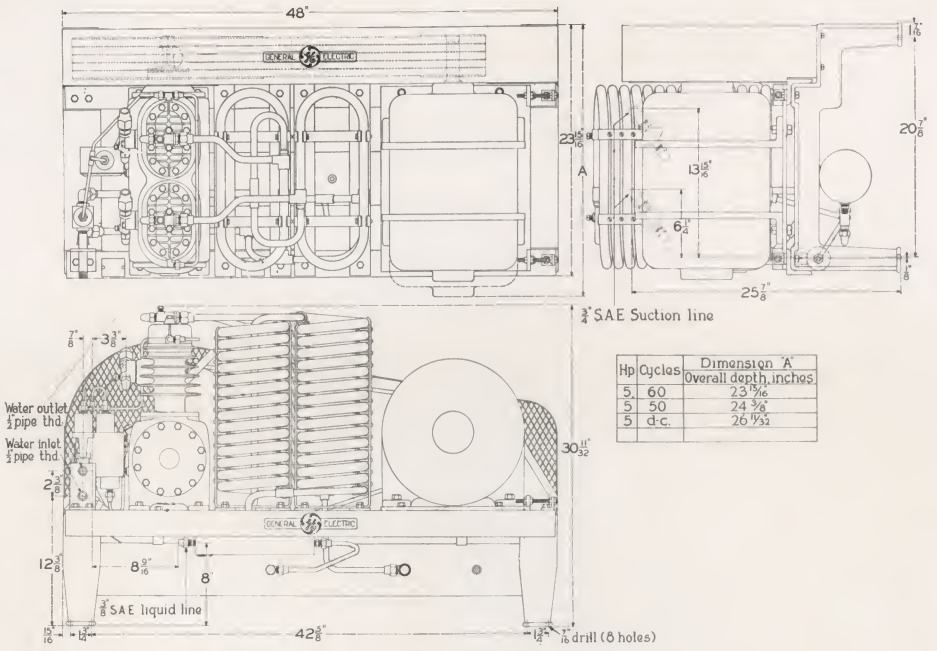
D-c. motor starter	
Standard	Current limiting magnetic type
A-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
Overload protection	Thermal overload relay in starter
Head pressure safety cutout	Actuated by condenser pressure
Back pressure control	Actuated by suction pressure

***Rating at Standard Conditions**

Cooling	54,500 Btu. per hr.
Power consumption	5.26 kw.
Water consumption	330 gal. per hr.

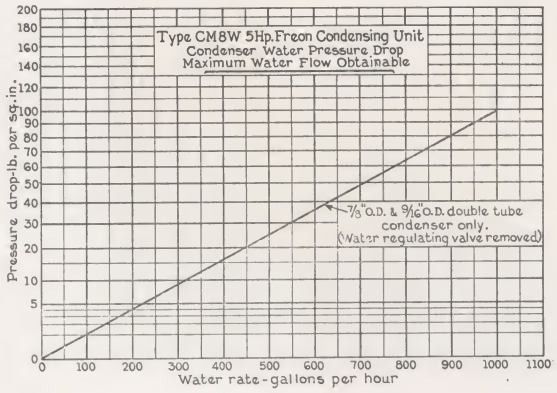
*** Note:** Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling water temperature	80 deg. F.
Evaporator refrigerant temperature	40 deg. F.
Ambient temperature	90 deg. F.
Head pressure	140 lb. per sq. in. gauge

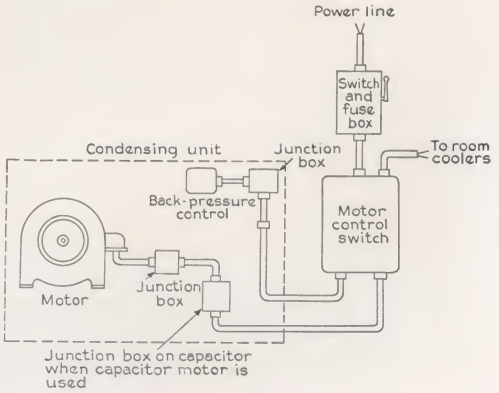


Hp	Cycles	Dimension "A" Overall depth, inches
5	60	23 15/16
5	50	24 3/8
5	d-c.	26 1/32

Connections and Dimensions



Water Pressure Drop Through Condenser



Electrical Connections

Compressor

Cylinders....4
Bore....2½ in.
Stroke....3½ in.
Speed....400 rpm.
Gaskets....Lead
Suction valves....4 Disc Type (In valve plate)
Discharge valves....4 Reed Type (In valve plate)
Valve plate....Meehanite (air cooled)
Suction service valves....Two ¾-in. sweat
Discharge service valves...Two ⅝-in. S.A.E. flare
Lubrication....Splash system
Oil charge....10 pints

Refrigerant Charge

Refrigerant....Freon
Normal charge....20 lb.
Min. for proper operation..6 lb.
Max. for proper operation..35 lb.

Liquid Receiver

Type....Horizontal welded steel
Capacity....35 lb.

Condenser

Type....Double copper coil
Cooling medium....Water

Water Regulating Valve

Type....Actuated by head pressure
Size....½ in.

Drive

Five "V" belts

Piping Connections

Cooling water inlet....One ½-in. outside pipe thread
Cooling water outlet....One ½-in. outside pipe thread
Refrigerant suction lines..Two ¾-in. sweat or S.A.E. flare
Refrigerant liquid line....One ⅜-in. S.A.E. flare

MODEL NUMBERS

CM-8W Condensing Unit	MOTOR		POWER SUPPLY*			APPROX. NET WEIGHT
	Type	Hp.	Volts	Cycles	Phase	Lb.
19CM8W205	SCR	5	220	60	1	730
19CM8W206	KB	5	220	60	3	690
19CM8W207	B	5	230	d-c.	..	785

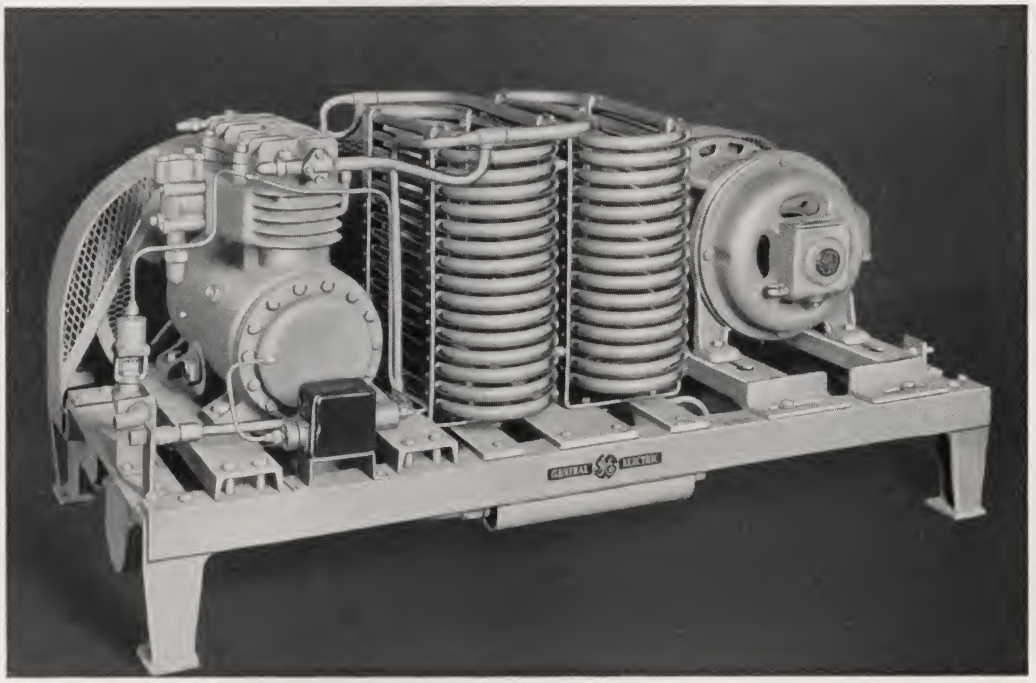
* Other power supplies available on special order.

Specifications

GENERAL ELECTRIC

CONDENSING UNIT

TYPE CM-9W



General

The General Electric condensing unit, Type CM-9W, carefully designed to give quiet operation, consists of an external motor, belt driven compressor, water cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction pressure control with high pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload thermal protective device and a starting switch. The unit is also provided with an adequate charge of Freon refrigerant and lubricating oil. Finish is an attractive gray.

Thermostatic control of this unit in a complete cooling system is available as optional equipment.

The Type CM-9W may be enclosed in a housing when concealed installations are necessary. Whenever this unit is located in a housing or unventilated space having a volume less than 350 cubic feet a water cooling coil is available to carry away heat due to motor losses.

To avoid excessive pressure drop in refrigerant lines it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded if larger than standard tubing is used to reduce the pressure drop. To insure proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling units.

Motor

D-c., 7½ hp	Compound wound, type B
D-c., 10 hp	Compound wound, type CD
A-c., single-phase (special order only)	
Standard	Repulsion induction, type SCR
Optional on order	Capacitor, type KC
A-c., polyphase	Double squirrel cage induction type KG

Control

D-c. motor starter	Current limiting magnetic type
A-c. motor starter	
Standard	Across-the-line magnetic type
Optional on order	Current limiting magnetic type
Overload protection	Thermal overload relay in starter
Head pressure safety cut-out	Actuated by condenser pressure
Back pressure control	Actuated by suction pressure

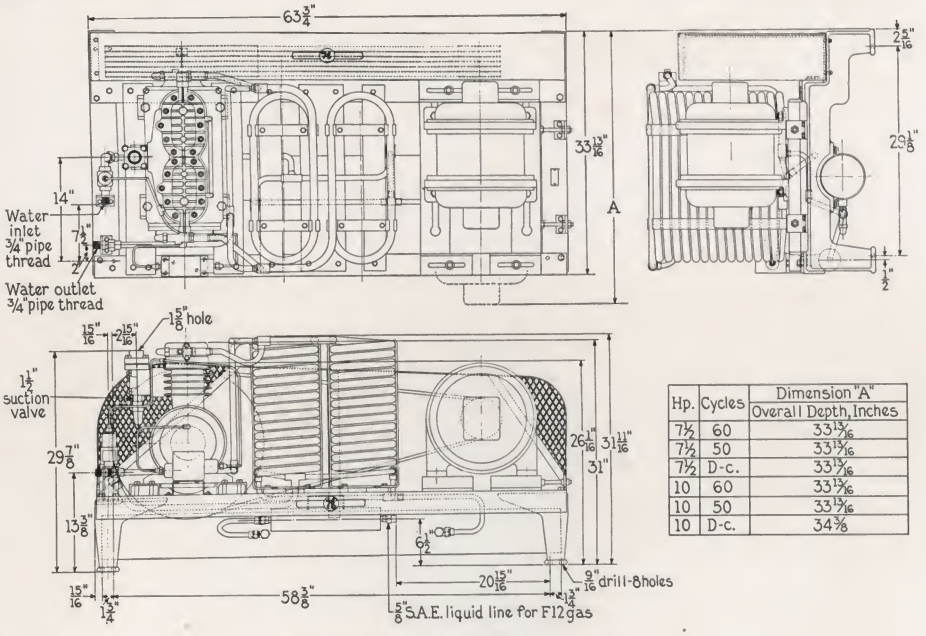
*Rating at Standard Conditions

Cooling,	7½ hp	79,500 Btu. per hr.
	10 hp	103,000 Btu. per hr.
Power consumption,	7½ hp	8.30 kw.
	10 hp	11.35 kw.
Water consumption,	7½ hp	390 gal. per hr.
	10 hp	520 gal. per hr.

Note:

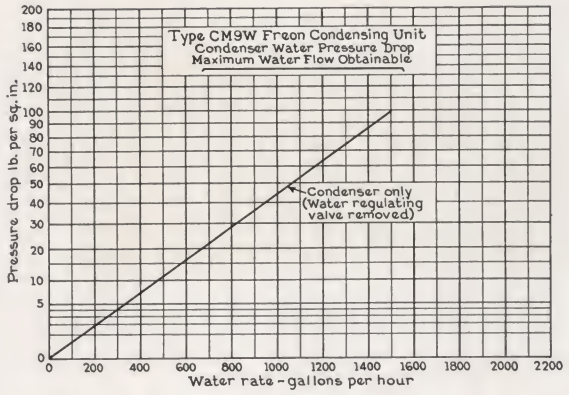
Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling water temperature	80 deg. F.
Evaporator refrigerant temperature	40 deg. F.
Ambient temperature	90 deg. F.
Head pressure, 7½ hp	150 lb. per sq. in. gauge
10 hp	155 lb. per sq. in. gauge

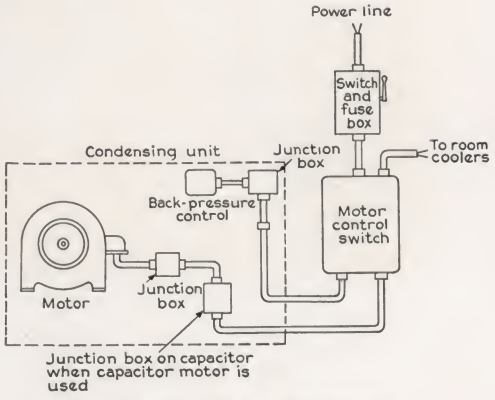


Hp.	Cycles	Dimension "A" Overall Depth, Inches
7½	60	33 13/16
7½	50	33 13/16
7½	D-c.	33 13/16
10	60	33 13/16
10	50	33 13/16
10	D-c.	34⅜

Connections and Dimensions



Water Pressure Drop Through Condenser



Electrical Connections

Compressor

Cylinders.....4
Bore.....3¼ in.
Stroke.....3¼ in.
Speed, 7½ hp.....375 rpm.
10 hp.....500 rpm.
Gaskets.....Lead
Suction valves.....4 Disc Type (In valve plate)
Discharge valves.....4 Reed Type (In valve plate)
Valve plate.....Meehanite (air cooled)
Suction service valve.....One 1½-in. sweat
Discharge service valves..Two ¾-in. sweat
Lubrication.....Forced feed system
Oil charge.....9 pints

Refrigerant Charge

Refrigerant.....Freon
Normal charge.....40 lb.
Min. for proper operation.17 lb.
Max. for proper operation.68 lb.

Liquid Receiver

Type.....Horizontal welded steel
Capacity.....68 lb.

Condenser

Type.....Double copper coil
Cooling medium.....Water

Water Regulating Valve

Type.....Actuated by head pressure
Size.....¾ in.

Drive

Six "V" belts

Piping Connections

Cooling water inlet.....One ¾-in. outside pipe thread
Cooling water outlet.....One ¾-in. outside pipe thread
Refrigerant suction line..One 1½-in. sweat
Refrigerant liquid line....One ⅝-in. S.A.E. flare

MODEL NUMBERS

CM-9W Condensing Unit	MOTOR		POWER SUPPLY*			Approx. Net Weight, Lb.
	Type	Hp.	Volts	Cycles	Phase	
19CM9W201	KG	7½	220/440	60	3	1350
19CM9W202	B	7½	230	d-c.	—	1450
19CM9W203	KG	10	220/440	60	3	1400
19CM9W204	CD	10	230	d-c.	—	1550

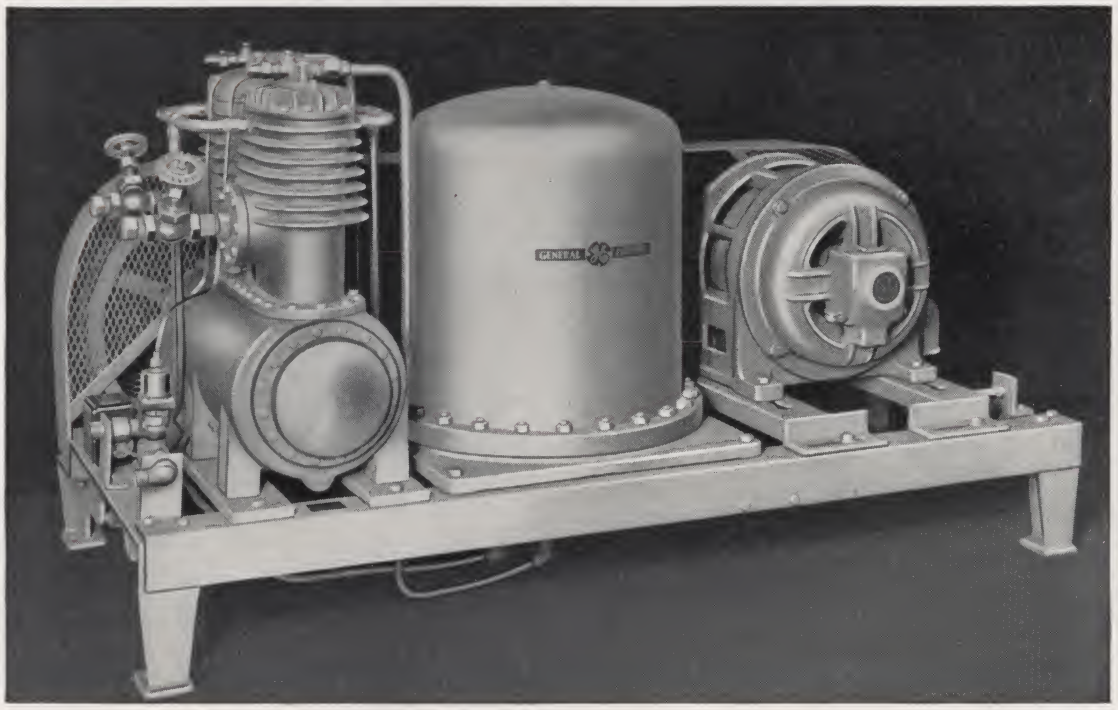
*Other power supplies available on special order

Specifications

GENERAL ELECTRIC

CONDENSING UNIT

TYPE CM-10W



General

The General Electric condensing unit, Type CM-10W, carefully designed to give quiet operation, consists of an external motor, belt-driven compressor, water-cooled condenser and a liquid receiver mounted on a sturdy base with a scale trap, liquid refrigerant filter, suction-pressure control with high-pressure safety cutout, service valves and sufficient connections to make a complete unit. With each unit is included a motor control consisting of an overload thermal protective device and a starting switch. The unit is charged with Freon refrigerant and lubricating oil. Finish is an attractive gray.

Thermostatic control of this unit in a complete cooling system is available on order.

The Type CM-10W may be enclosed in a housing when concealed installations are necessary. Whenever the condensing unit is located in a housing or in any unventilated space having a volume less than 550 cubic feet a water-cooled coil is available to carry away heat due to motor losses.

To avoid excessive pressure drop in refrigerant lines it is desirable to locate the condensing unit not more than 50 feet from the cooling units. Distances of 50 feet may be exceeded if larger than standard tubing is used to reduce the pressure drop. To insure the proper oil return from cooling units the condensing unit should not be more than 15 feet above the cooling unit.

Motor

D-c.	Compound wound, type CD
A-c., polyphase	Double squirrel cage induction, type KG

Control

D-c. motor starter	Current limiting magnetic type
A-c. motor starter	
Standard	Across-the-line magnetic type
On special order	Current limiting magnetic type
Overload protection	Thermal overload relay in starter
Head pressure safety cutout	Actuated by condenser pressure
Back pressure control	Actuated by suction pressure

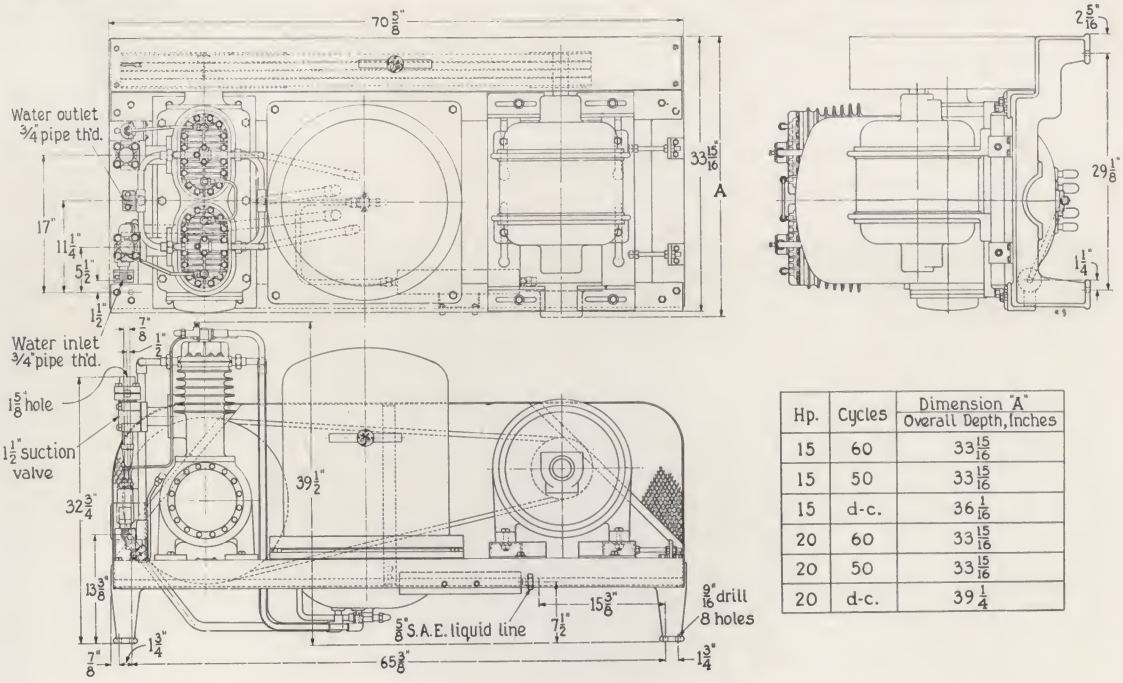
***Rating at Standard Conditions**

Cooling, 15 hp	136,000 Btu. per hr.
20 hp	170,000 Btu. per hr.
Power consumption, 15 hp	15.8 kw.
20 hp	20.7 kw.
Water consumption, 15 hp	900 gal. per hr.
20 hp	1100 gal. per hr.

***Note:**

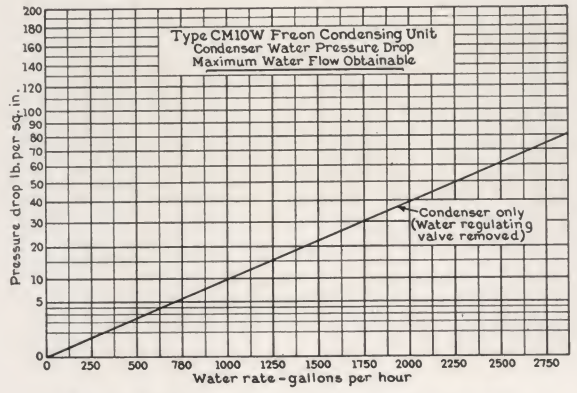
Ratings vary with operating conditions. Above ratings are given under following conditions:

Cooling water temperature	80 deg. F.
Evaporator refrigerant temperature	40 deg. F.
Ambient temperature	90 deg. F.
Head pressure, 15 hp	160 lb. per sq. in. gauge
20 hp	165 lb. per sq. in. gauge

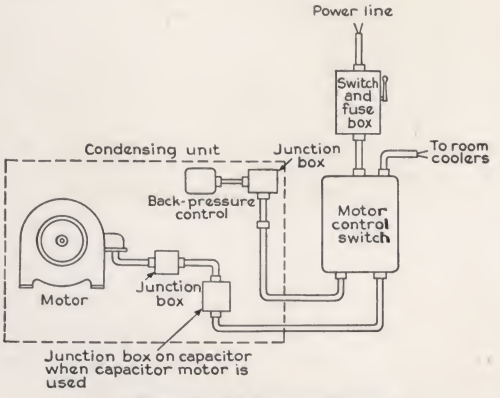


Hp.	Cycles	Dimension "A" Overall Depth, Inches
15	60	33 15/16
15	50	33 15/16
15	d-c.	36 1/16
20	60	33 15/16
20	50	33 15/16
20	d-c.	39 1/4

Connections and Dimensions



Water Pressure Drop Through Condenser



Electrical Connections

Compressor

Cylinders.....4
Bore.....4 in.
Stroke.....4 in.
Speed, 15 hp.....465 rpm.
20 hp.....600 rpm.
Gaskets.....Lead
Suction valves.....4 Disc Type (In Piston Heads)
Discharge valves.....4 Reed Type (In Valve Plate)
Valve plate.....Meehanite (water cooled)
Suction service valves.....Two 1⅝-in. O.D. sweat
Discharge service valves....Two ¾-in. sweat
Lubrication.....Forced feed
Oil charge.....6½ pints

Refrigerant Charge

Refrigerant.....Freon
Normal charge.....50 lb.
Minimum for proper operation.....23 lb.
Capacity of liquid receiver..68 lb.

Condenser

Type.....Shell and Tube
Cooling medium.....Water
Liquid receiver.....Formed by condenser sump

Water Regulating Valve

Type.....Actuated by head pressure
Size.....¾ in.

Drive

Four "V" belts

Piping Connections

Cooling water inlet.....One ¾-in. outside pipe thread
Cooling water outlet.....One 1-in. outside pipe thread
Refrigerant suction lines....Two 1⅝-in. O.D. sweat
Refrigerant liquid line.....One ⅝-in. S.A.E. flare

MODEL NUMBERS

CM-10W Condensing Unit	MOTOR		POWER SUPPLY			APPROX. NET WEIGHT
	Type	Hp.	Volts	Cycles	Phase	Lb.
19CM10W201	KG	15	220/440	60	3	1950
19CM10W202	CD	15	230	d-c.	—	2100
19CM10W203	KG	20	220/440	60	3	2050

*Other power supplies available on special order.